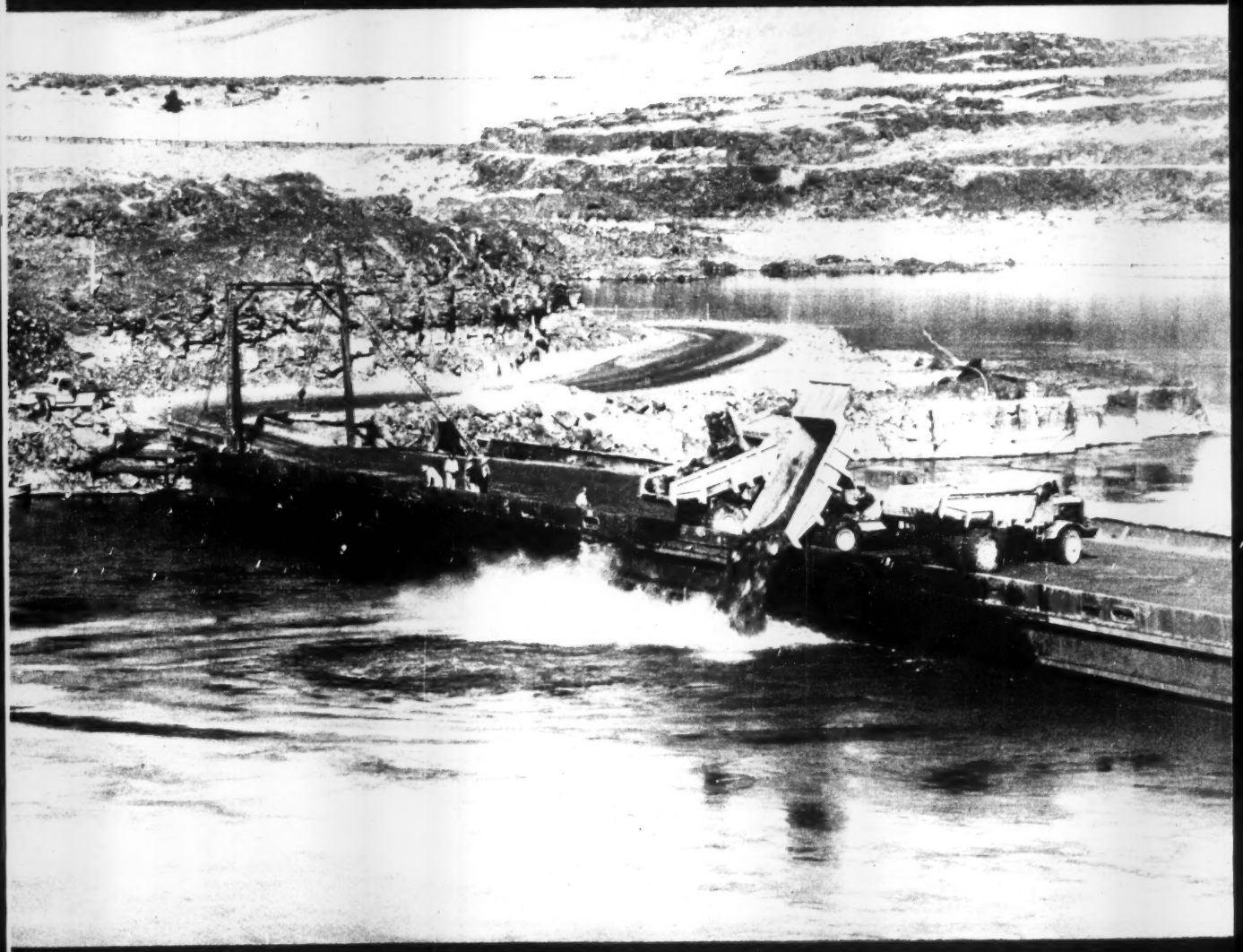
ENGINEERING NEWS-RECORD



A McGRAW-HILL PUBLICATION

now that WROUGHT IRON PIPE *is in the Act!*

From 1920 to 1946, the history of the floor piping in the Philadelphia Arena Skating Rink, owned by the Philadelphia Arena, Inc., was one of constant patching and repairing . . . even when the entire rink was completely repiped in 1929 the failures continued.

Rightly concerned over the costly maintenance and shut-down, rink officials investigated. Their findings led to the selection of wrought iron pipe as the solution to these maintenance problems. Late in 1946, the trouble-making pipe was removed and the Arena was completely repiped with wrought iron.

Today, after seven years of service under conditions identical to those which had caused a continuing maintenance headache, the wrought iron installation is still in excellent condition and gives promise of maintenance-free performance for years to come.

Because of the severe corrosive conditions in skating rink installations, any pipe that is not inherently corrosion-resistant is doomed to early failure. The superior qualities of wrought iron for this service are responsible for use of wrought iron pipe in over 80% of the ice rinks built in the United States in the past seven years.

You'll find some interesting information in our bulletin, *Wrought Iron in Refrigeration and Air Conditioning Systems.* Write for a copy.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. Export Department: New York, N.Y.

Here's why WROUGHT IRON PIPE is the NUMBER ONE choice for ice rinks

Wrought Iron can be fabricated with speed and ease . . . it takes short radius bends without "spring-back"; produces sound welds, free of pinhole leaks. Its structure insures sharp, clean threading; its mechanical strength withstands damage during installation. Glass-like silicon fibers throughout the body of the high-purity iron halt corrosion, "detour" pitting, and anchor the protective outer scale.

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

If you STALL—profits STOP!

When a tire fails to *grip*, you lose time and money. When a tire "dies" on the job, men and equipment stand idle, profits disappear.

That's why the *only* tires you can afford are the best *workers*—the ones that can take on tire-killing jobs, day in, day out—and keep going!

Only worlds of experience can build such tires—*and Goodyear has it*—for Goodyear has built more tires for more uses than anyone else on earth!

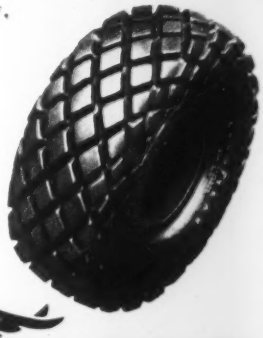
This enormous, unequaled experience gives Goodyear a *practical* approach to your tire problems that means better pull and longer wear. So why not protect *your* profits with the tires that *proved* they pay their own way, day after day, on the toughest jobs on earth?

Goodyear, Truck Tire Department, Akron 16, Ohio.

FOR EACH JOB, THERE'S A COST-CUTTING GOODYEAR TIRE!

The **SURE-GRIP** for traction

The **HARD ROCK LUG** for tire-killing work



The **ALL-WEATHER** for flotation

Sure-Grip, All-Weather—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

We think you'll like "THE GREATEST STORY EVER TOLD"—every Sunday—ABC Radio Network—"THE GOODYEAR TELEVISION PLAYHOUSE"—every other Sunday—NBC TV Network

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Robert F. Boger

Publisher

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NORTHWEST

NO STUTTER · NO RESTARTS · NO DIPPER JUGGLING

MANY people have wondered why a Northwest is so fast. Northwest operation is so smooth that it doesn't look fast. Get on a Northwest and feel that Crowd bite into the rock! Count the trucks!

A Northwest doesn't waste time! It's a real Rock Shovel — no stutter — no restarts — no dipper juggling either in the bank or in getting the load into the truck. The cycle is smooth. Operation is easy. The Northwest Dual Independent Crowd utilizes force most other independent crowd shovels waste. The swing takes hold smoothly — no jerks, no grabs — the dipper is up and out — over the truck and back — up and out — over the truck and back minute by minute, hour after hour! — That's why you see big output figures in connection with Northwests.

Northwest equipment is profitable equipment to own. That is the reason why one out of every three Northwest Shovels sold is a repeat order in the hands of a successful contractor.

There are many other advantages you should ask about.

NORTHWEST ENGINEERING COMPANY

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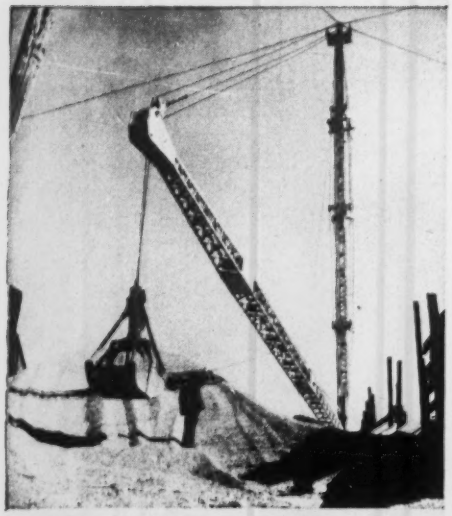
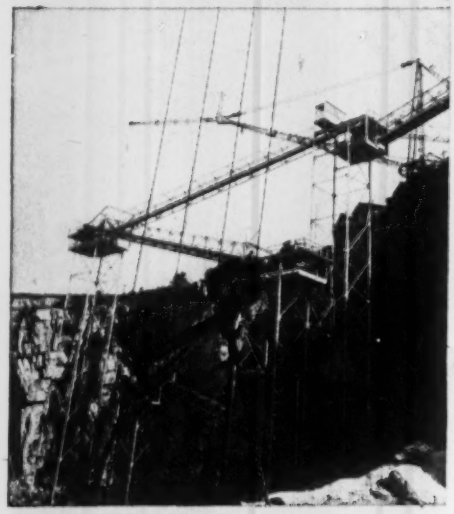
SHOVELS • CRANES • DRAGLINES • PULLSHOVELS

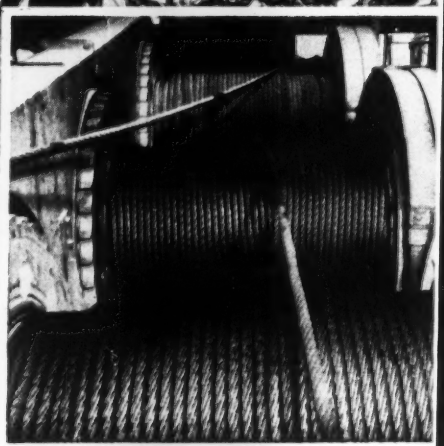
At this granite quarry



TINY PARTICLES OF GRANITE DUST are constantly grinding away the wire ropes on this Storage Derrick. But ¾" Tiger Brand Ropes have averaged many years of good service in spite of this severe abrasive action.

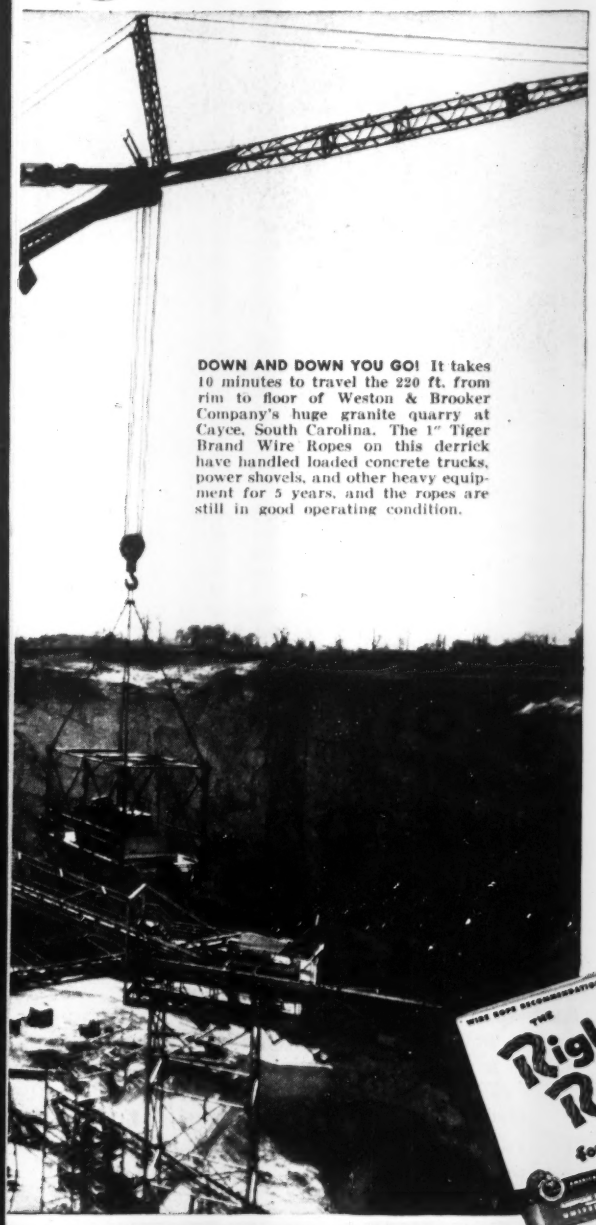


SAFE AND SOUND after years of continuous service. That is the amazing record of the ¾" Tiger Brand Ropes on this cableway, which is used to move workers in and out of the quarry.



THE WESTON & BROOKER COMPANY likes Tiger Brand Wire Ropes because they meet the stiff operating requirements and do every job economically.

Tiger Brand Wire Ropes have been used 29 years!



DOWN AND DOWN YOU GO! It takes 10 minutes to travel the 220 ft. from rim to floor of Weston & Brooker Company's huge granite quarry at Cayce, South Carolina. The 1" Tiger Brand Wire Ropes on this derrick have handled loaded concrete trucks, power shovels, and other heavy equipment for 5 years, and the ropes are still in good operating condition.

PLUNGING 220 ft. down through solid granite, this big open quarry is one of the deepest in the country. But no roads wind down to the floor, so The Weston & Brooker Company must transport all men and equipment with cableways and derricks.

This old, experienced company prefers American Tiger Brand Wire Ropes for this equipment over any other brand. Tiger Brand Ropes meet the tough operating requirements and give remarkable service.

On a cableway, which was installed in 1924, Tiger Brand Ropes have given long and phenomenal service.

On a big 70-ton stiff-leg derrick, which lifts shovels, trucks and other equipment weighing up to 80 tons, Tiger Brand Ropes are still in use after five years of hard service.

On a revolving storage crane, which operates right in the thick of hard, abrasive granite dust, Tiger Brand Wire Ropes again have given exceptional service.

Tiger Brand Wire Ropes will give *you* exceptionally long, low-cost service too. Send the coupon for a run-down on the hundreds of sizes and types available and typical jobs that each rope can do.

HELPFUL GUIDE BOOK

American Steel & Wire
842 Rockefeller Building
Cleveland 13, Ohio

Please send me, without obligation, a copy of your booklet, "The Right Rope for the Job," which lists the correct Tiger Brand Rope to use for hundreds of typical applications.

Name_____

Company_____

Address_____

City & State_____

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U·S·S AMERICAN TIGER BRAND WIRE ROPE

Excellay Preformed

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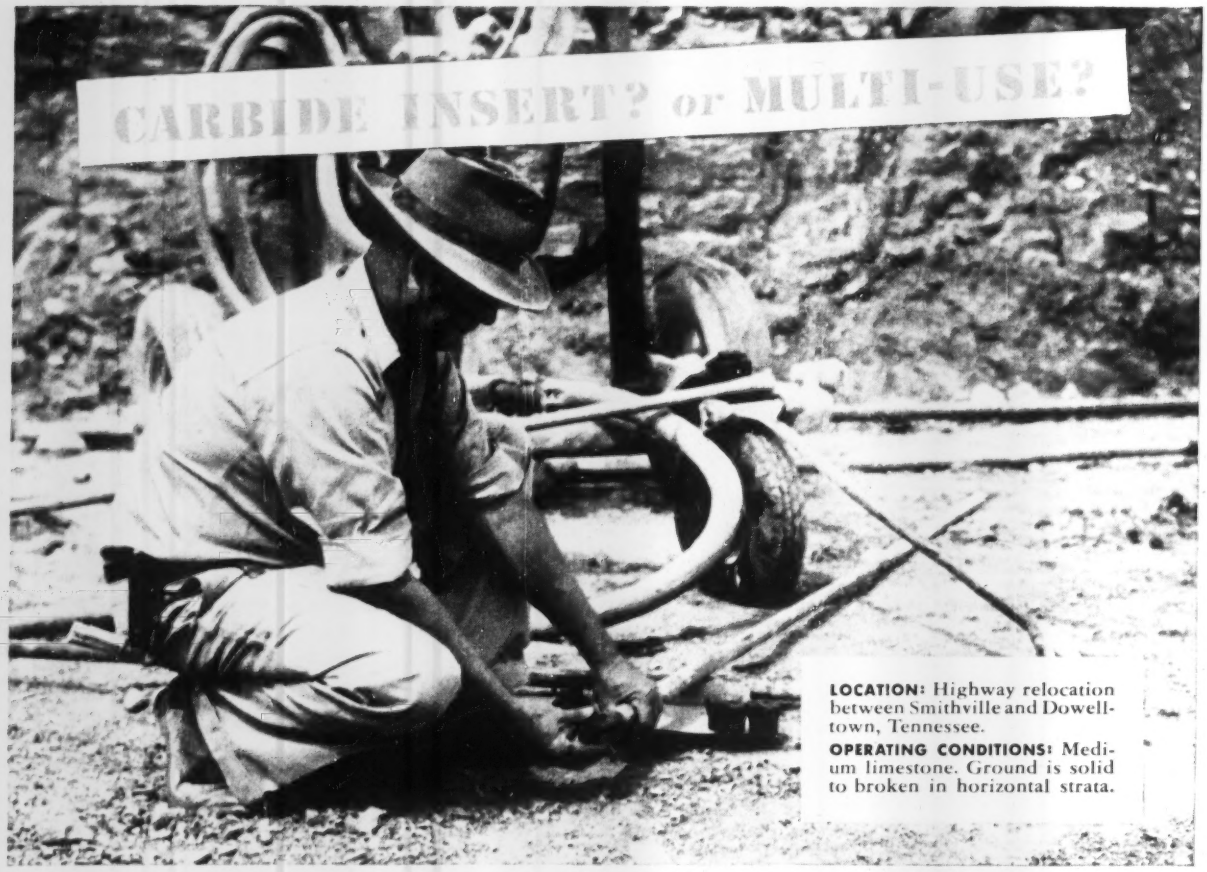
UNITED STATES STEEL


CARBIDE INSERT? or MULTI-USE?
LOCATION: Highway relocation between Smithville and Dowelltown, Tennessee.
OPERATING CONDITIONS: Medium limestone. Ground is solid to broken in horizontal strata.

H. E. Wolfe Construction Co. gets lowest cost per foot of hole with TIMKEN® multi-use rock bits

THE H. E. Wolfe Construction Co., Inc. had two big reasons for using Timken® multi-use rock bits on this Tennessee highway relocation job. 1) Timken multi-use rock bits cut drilling costs. 2) They're available in a wide range of sizes.

With correct and controlled reconditioning, Timken multi-use bits give you the lowest cost per foot of hole when full increments of steel can be drilled.

But they are not the best answer to *all* your drilling problems.

When drilling in hard and abrasive ground, Timken carbide insert bits give you higher drilling speed. And they're most economical for constant-gage holes, small blast holes and very deep holes.

Best of all, both Timken carbide insert and multi-use bits are interchangeable in the same thread series. As many as 93 different sizes of Timken bits fit the same drill steel! Let you change bits quickly, easily as the ground changes—right on the job!

Both Timken carbide insert and multi-use bits are made from electric furnace Timken fine alloy steel, and have the shoulder union developed by Timken which protects threads from drilling impact.

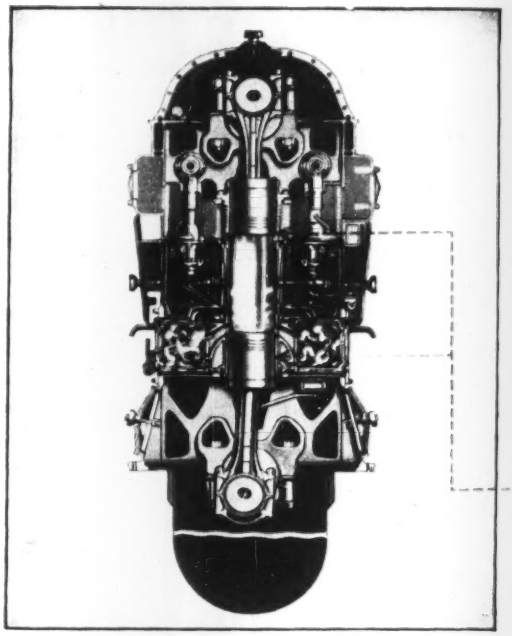
For help in choosing the best bit type for your drilling requirements, call on The Timken Rock Bit Engineering Service. Write The Timken Roller Bearing Company, Rock Bit Division, Canton 6, Ohio. Cable address: "TIMROSCO".

Timken threaded multi-use rock bit

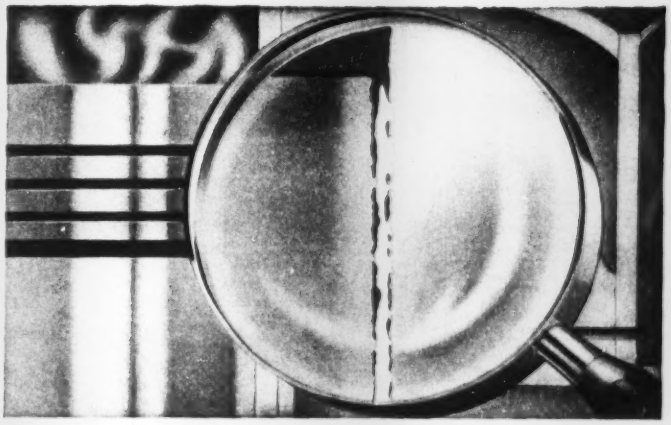
Timken threaded carbide insert rock bit

your best bet for the best bit ... for every job

TIMKEN

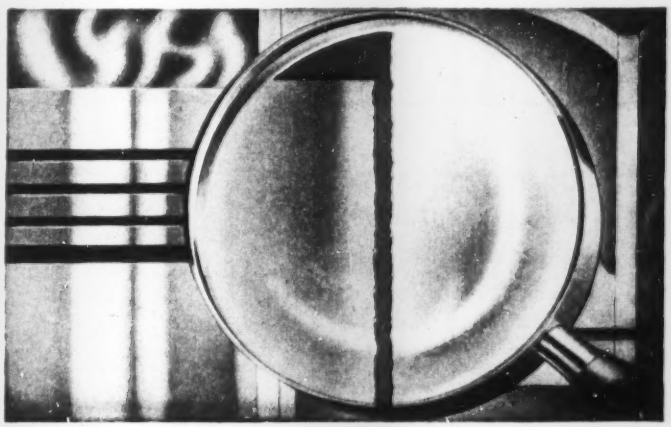


←That demon friction... not only at the points indicated here, but with all moving parts throughout any engine . . . can steal up to 50% of the power produced by your fuel.



↑ *Drawing above* illustrates how inferior diesel oils . . . oils with weak film strength and less free-flowing qualities . . . provide insufficient lubrication and set up friction points.

↓ *Shown below* is the complete coverage Cities Service D-C Oils provide. They provide a strong, adequate oil film, a positive seal between piston rings and cylinder walls.



POWER LOSS DUE TO FRICTION must be held to a minimum

Much of the power generated by any motor fuel is wasted in overcoming friction. But this loss must, and can be held to a minimum with the proper lubricants . . . Cities Service Diesel Lubricants.

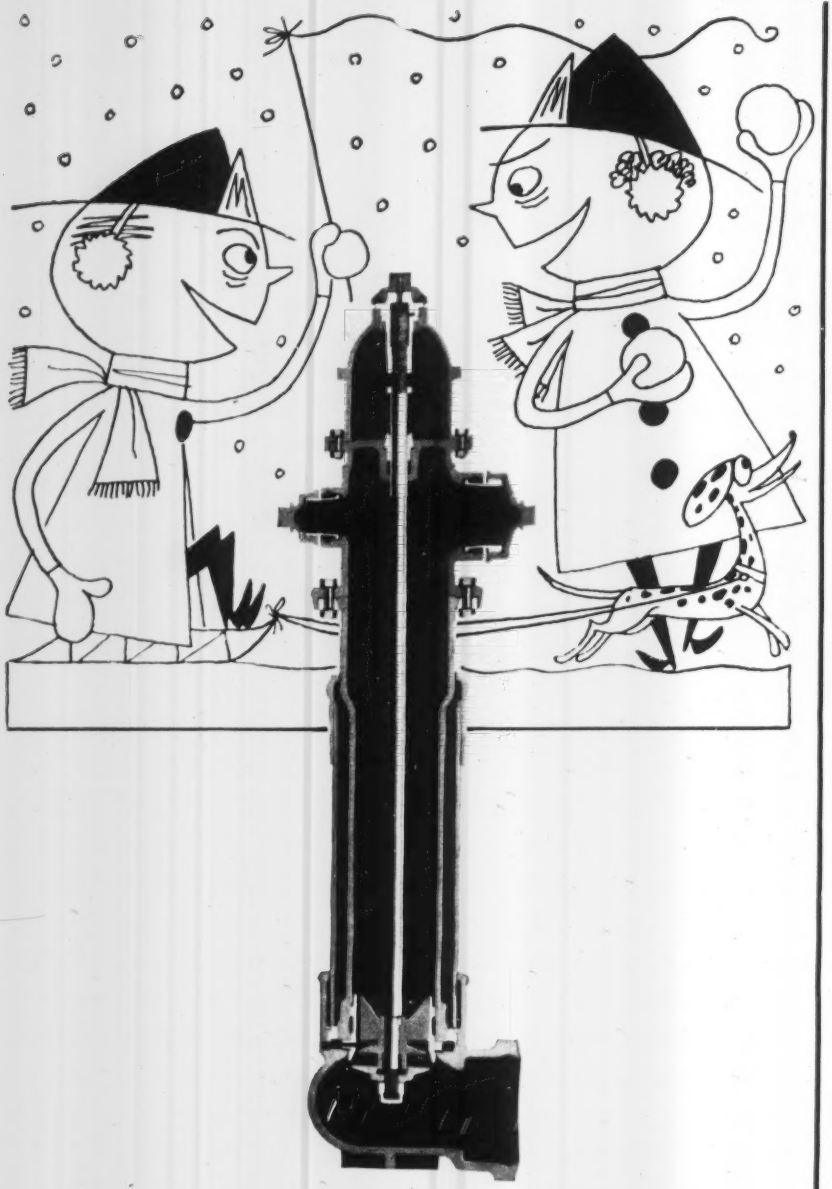
With exceptionally high film-strength and free-flowing qualities, Cities Service Diesel Oils provide a perfect oil film between all moving parts and thorough lubrication of the most intricate diesel mechanisms under severest operating conditions. They reduce power-stealing friction to the barest minimum.

Be sure you're getting all the power your diesels were designed to give. Use the complete line of Cities Service D-C Oils. Ask your Cities Service Representative, or call the office nearest you.

CITIES SERVICE DIESEL OILS ALSO:

- **Minimize wear under all conditions.**
- **Provide a positive seal between piston rings and cylinder walls.**
- **Serve as a coolant to fight heat.**
- **Clean as they lubricate.**

CITIES SERVICE



MATHEWS

HYDRANTS

Made by R. D. Wood Company

Public Ledger Building, Independence Square, Philadelphia 5, Pa.

Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves

150th anniversary

Fair Weather or Foul... No Water Can Enter Head to Freeze, No Sediment Can Reach Operating Thread

• The stuffing box plate, cast integral with the nozzle section, covers the entire area of the head and, with the packing, prevents water from reaching the operating thread. This means no rust can form and no sediment can be deposited on the thread to wear and destroy it.

• No matter how cold the weather, the stem thread cannot freeze to the nut, nor can ice form inside it to interfere with closing the hydrant.

• Community fire protection is assured with the installation of Mathews Hydrants—vital links between hose and water main.

No Other Hydrant Offers So Many Essential Features:

Compression type valve prevents flooding • Head turns 360° • Replaceable head • Nozzle sections easily changed • Nozzle sections easily raised or lowered without excavating • Protection case of "Sand-Spun" cast iron for strength, toughness, elasticity • Operating thread only part to be lubricated • All working parts contained in removable barrel • A modern barrel makes an old Mathews good as new • Available with mechanical-joint pipe connections

. . . the finest structures rest on

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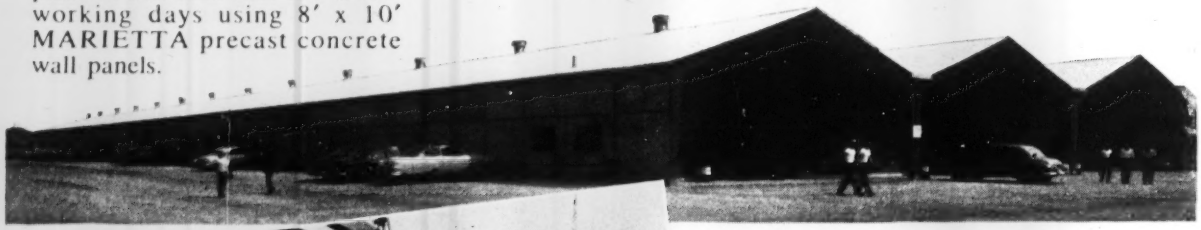
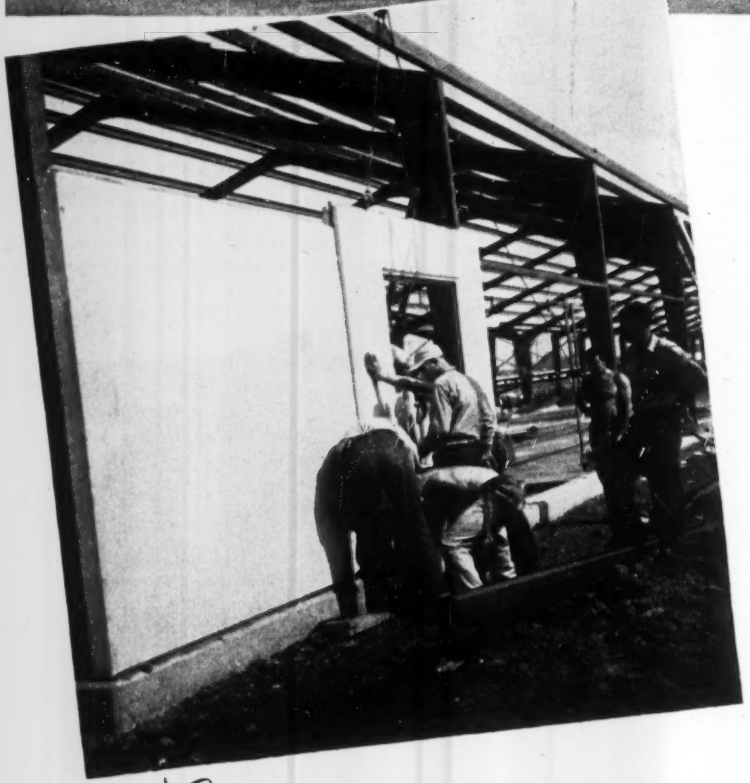
Branch Offices in the Principal Cities of United States and Central and South America

ROME wasn't built in a day...

...but 16,000 sq. ft. of wall area was set in place in less than 4½ days with MARIETTA CONCRETE WALL PANELS!

Shown below is the new Merchants' and Manufacturers' Building recently erected on the Ohio State Fairgrounds at Columbus, Ohio. One of the largest buildings in the country to be entirely prefabricated, it measures 500′ x 150′. The entire area was set in place in less than four and a half working days using 8′ x 10′ MARIETTA precast concrete wall panels.





When time is of the essence, you will find MARIETTA precast concrete wall panels provide a quick and easy answer. Each slab bolts directly to steel framework by means of cast-in metal inserts, cutting construction costs by as much as 30%. Panels can be supplied in various sizes and in thickness from 5″ to 8″. A MARIETTA panel only 5″ thick more than equals the insulation value of a 12″ masonry wall!

When it comes to appearance, a building couldn't be better looking—MARIETTA panels have a muslin finish interior, and the exterior is broomed, giving a texture that closely resembles Indiana limestone.

For modern buildings . . . for speedy erection at lower cost, specify MARIETTA precast concrete wall panels. Write today for complete information.

THE *Marietta* CONCRETE CORP.
MARIETTA, OHIO

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PRECAST CONCRETE PRODUCTS FOR FARM, HOME AND INDUSTRY

Only ADAMS Motor Graders give you all these features

● Never before have so many important work-producing, money-saving features been incorporated in one motor grader—*and you get them all only in Adams improved heavy-duty models.*

A typical owner comment comes from C. H. Lawson, president of C. H. Lawson, Inc., contractors of Williamsburg, Va., who says of his new 100 hp. Adams, pictured above, "This is the best motor grader I have ever owned. I like its speed and traction, and it has plenty of power to handle a full blade. Also I like its ability to back up fast."

Ask your local Adams dealer to demonstrate one of these high-performing, cost-cutting motor graders—*on one of your own jobs.*

J. D. ADAMS MANUFACTURING CO. • INDIANAPOLIS, IND.

Make your next motor grader an

ADAMS

SHELL ROTELLA OIL

reduces piston ring and cylinder wear as much as 50%

Houston Contracting Company of Houston, Texas, uses Shell Rotella Oil on Caterpillar Diesel D8 tractors. The photograph shows work on the McCamey-Houston, Texas, pipeline extension

FROM COAST TO COAST, operators of heavy-duty construction equipment report sizeable reductions in engine-parts wear with Shell Rotella Oil. That's because the balanced alkaline fortification in Shell Rotella Oil fights one of the chief causes of excessive engine wear—cylinder and bearing wear caused by acidic products which result, for example, from incomplete combustion.

Excessive wear on heavily loaded bearings is cut down by Shell Rotella Oil's tougher lubricating film. Its effective detergent-dispersant action prevents harmful deposits.

* * *

Write for latest technical information. See how Shell Rotella Oil can help reduce your engine maintenance costs.

SHELL OIL COMPANY

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SHELL

READER COMMENT

Plants can be fire safe

SIR: We read with great interest your editorial, "Facts on Fire Needed," in the Aug. 27 issue and wish to congratulate you and your staff on its thought-provoking statements and questions.

Many of us engaged in fire-prevention and fire-protection engineering as a full-time profession are convinced that solutions to most fire-hazard problems have been developed and are available to the public. Yet, fire-destruction statistics continue to indicate that property owners, operators and designers are not accepting or utilizing these solutions. Too many still cling to the idea that fire insurance provides protection against fire destruction and its resultant losses. Can an insurance policy prevent, control, or extinguish a fire? There is only one means of obtaining insurance against fire destruction and that is by engineering fire prevention and fire protection into each building and each operation and process it houses . . .

Is fire protection too costly? Annually, fire results in the loss of more than 12,000 human lives. How much is a human life worth in dollars and cents? Certainly, saving lives alone would justify a tremendous expenditure for fire prevention and fire protection.

Annually, the direct physical property loss due to fire approaches $1 billion. The indirect, generally uninsurable losses due to fire are inestimable and probably extend into the tens of billons of dollars. The effect of these losses is well-emphasized by the fact that about eight out of ten businesses subjected to a large fire never fully regain their position in the business world . . .

The general public, as well as the property owner, operator and designer must be sold on the idea that fire prevention and fire protection should be engineered into each plant and each building occupancy in the same manner as architectural, structural, electrical, and mechanical engineering . . .

Many authentic reports will be prepared and issued concerning the General Motors fire (ENR Aug. 20, p. 28). These reports will discuss in great detail the questions asked in your editorial and the many other complex conditions that together allowed the fire to spread throughout the large plant. A careful study of these reports probably will show that the primary causes of this fire were the same as for many past industrial fires. Will management,

• • After sand loading full scale standard truss, deflection measurements at design load and during overloading provide proof of safety and performance.

TECO QUALITY PRODUCTS *are proven*

with full scale, long duration loading tests—the "acid test" for all timber connectors and systems of wood framing.

TECO engineers use special facilities at the TECO Laboratory in checking the performance of TECO connectors in timber structures.

Because of assured performance, backed by more than 20 years of research, testing and use, more and more engineers and architects are designing in timber—with confidence—and they always specify TECO WEDGE-FIT ring connectors for trusses and Trip-L-Grip framing anchors for secondary connections.

Timber fabricators throughout the nation are helping speed up both light and heavy construction by supplying prefabricated ready-to-erect timber roof trusses and framing members.

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ENR

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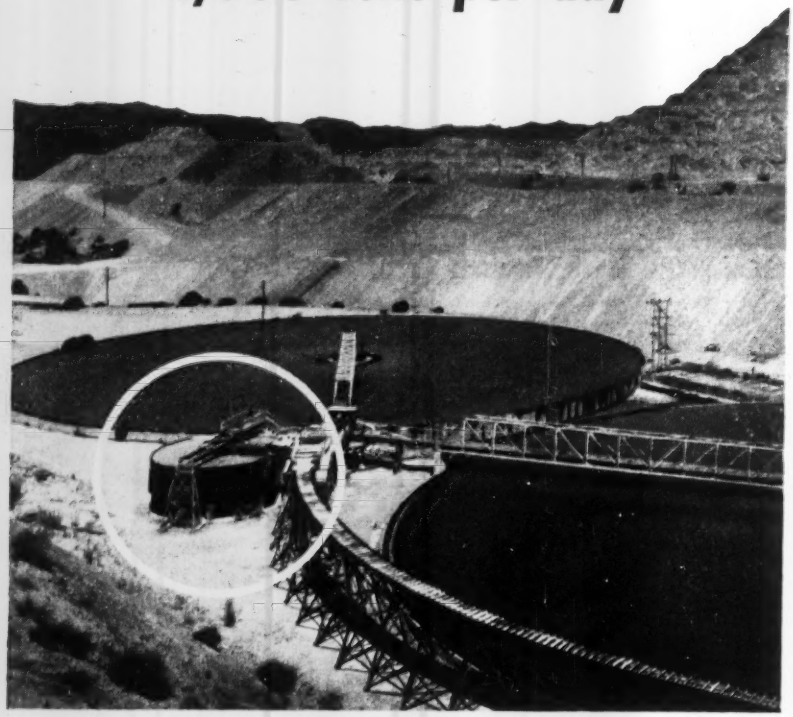

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READER COMMENT

property designers, and all other interested parties take the time to study and evaluate both the causes and corrective measures to prevent future occurrences of similar fires? And then, will they follow through and do something about it?

Your statement that "Fire safety must be designed into a building to such a degree that it will be effective almost regardless of the type of occupancy that occurs" is certainly sound and should be emphasized. This is a fundamental concept of fire prevention engineering and must be applied on the drafting board and during the construction phase—not after the plant is completed and the manufacturing or warehousing operation has begun. Likewise, fire prevention must be engineered into each manufacturing process before it is put into operation. Fire prevention and fire protection can be economically incorporated in every project by intelligent planning, competent engineering, and practical application of the known principles of fire safety.

FRANK H. GAGE
President
U. S. Fire Protection Engineering Service, Inc.
Kansas City, Mo.

CALENDAR

American Public Works Association, annual public works congress and equipment show, Roosevelt Hotel and Municipal Auditorium, New Orleans, La., Oct. 26-29.

California Section, American Water Works Association, Palace Hotel, San Francisco, Calif., Oct. 27-30.

American Concrete Institute, Southwestern regional meeting, Rice Hotel, Houston, Tex., Oct. 29-30.

National Council of State Boards of Engineering Examiners, annual meeting, Plaza Hotel, San Antonio, Tex., Oct. 29-31.

Fourth annual conference on coastal engineering, Council for Wave Research, Del Prado Hotel, Chicago, Ill., Oct. 29-31.

Illinois Traffic Engineering Conference, University of Illinois campus, Urbana, Ill., Nov. 3-4.

Structural Clay Products Institute, The Greenbrier, White Sulphur Springs, W. Va., Nov. 7-11.

American Association of State Highway Officials, annual meeting, Wm. Penn Hotel, Pittsburgh, Pa., Nov. 10-13.

Conference on porcelain enamel in the building industry, National Academy of Sciences, Washington, D. C., Nov. 12-13.

Fall meeting, Tennessee Valley section, ASCE, Whittle Springs Hotel, Knoxville, Tenn., Nov. 13-14.

Highway and Surveying conference, University of Florida, Gainesville, Nov. 19-20.

American Institute of Steel Construction, annual convention, Boca Raton Hotel, Boca Raton, Fla., Nov. 30-Dec. 4.

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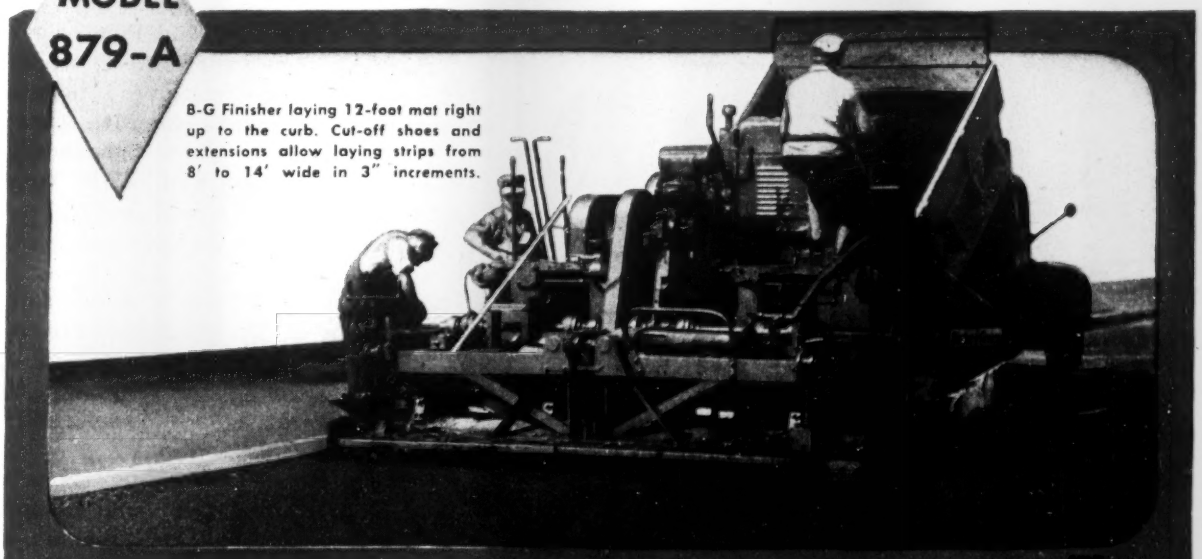

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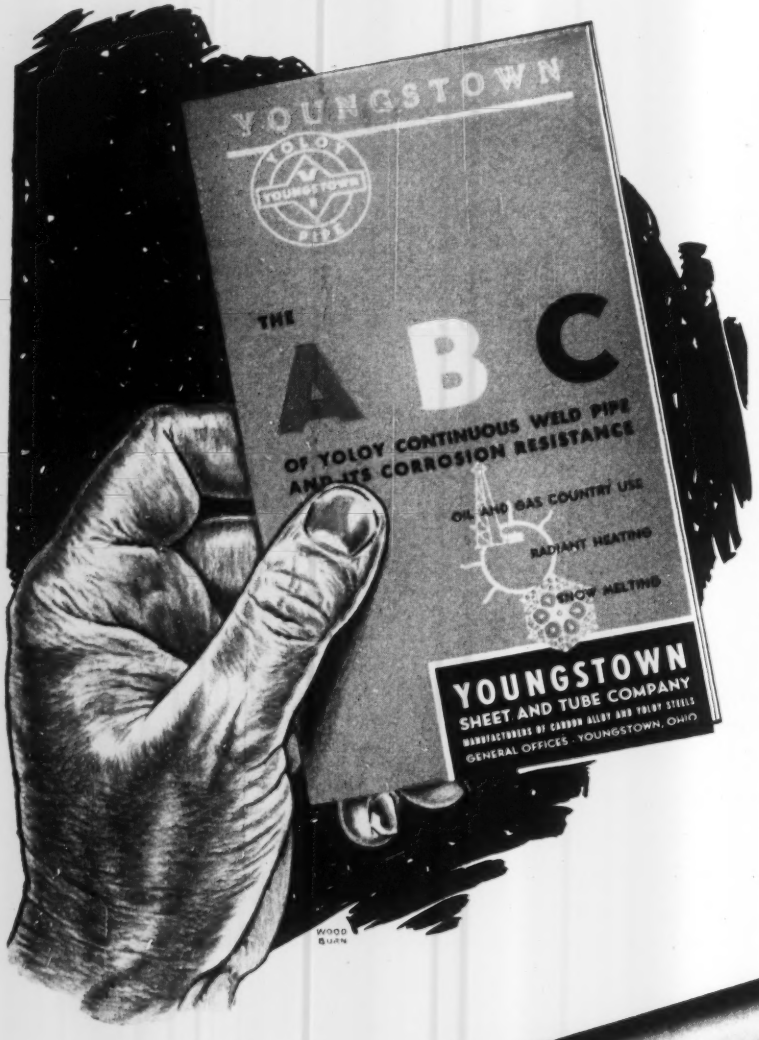

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THE CONSTRUCTION WEEK

- **Care needed on housing**—You need to exercise some care in assessing that 92,000-start figure that the Bureau of Labor Statistics reports for housing in September:

  While it represents a drop of 2,000 units under the August total, and is the fifth straight month this year that the reported starts have slipped—it isn't as big a drop for the month as observers could have expected on the basis of normal seasonal patterns of previous years. Actual starts through the year to the end of September now stand at 863,400, and it seems a safe bet that starts will be around the predicted 1,000,000 at year's end.

  In 1952, the total to September was 868,300, and the final figure reached 1,127,000 starts.

- **Bus terminal building caution**—Don't look for much construction—for a while at least—to come out of the recent action whereby Greyhound Corp. bought itself back from a number of railroads that had owned partnership interests in various Greyhound lines.

  The bus system's offices in Chicago won't make any big plans at all until current purchase negotiations are approved by the Interstate Commerce Commission; and there's no pressing need for new terminals at the moment—except possibly in Philadelphia, where the buses have been using the Pennsylvania stations.

- **Defense work**—One bit of construction work to be looked for out of the current flurry over air defense should be the proposed early warning radar network planned along the northern borders of Canada and Alaska.

  Work must await establishment of a U. S.-Canadian coordination group, and appropriations of funds for construction and special equipment.

  But there's a straw in the fact that a big U. S. manufacturer is just completing experimental units for the defense line—a special radar development that may make possible radar stations further apart than is now practicable. And with these more isolated stations would come airstrips, barracks, special buildings.

- **Power from atom?**—There's plenty of interest for the whole industry in General Electric's proposal to proceed at once with development and design of an atomic power plant that would produce both power and plutonium within five years.

  Cost, said GE's guarded announcement, would exceed $40 million—and the plant would become a chief power source for the big Hanford works of the Atomic Energy Commission. Guessers estimate the proposed plant would have an electric energy capacity of 300,000 kw.

- **Spanish job tip**—Get busy now if you want a job in Spain—either as a contractor, or as an individual. Present plans call for selection of a U. S. firm or combine to serve as prime contractor, on cost-plus-fixed-fee, about the first of the year. Meanwhile, up-to-date brochures on applicants should be submitted quickly to the Chief, Bureau of Yards and Docks, Washington 25, D.C.

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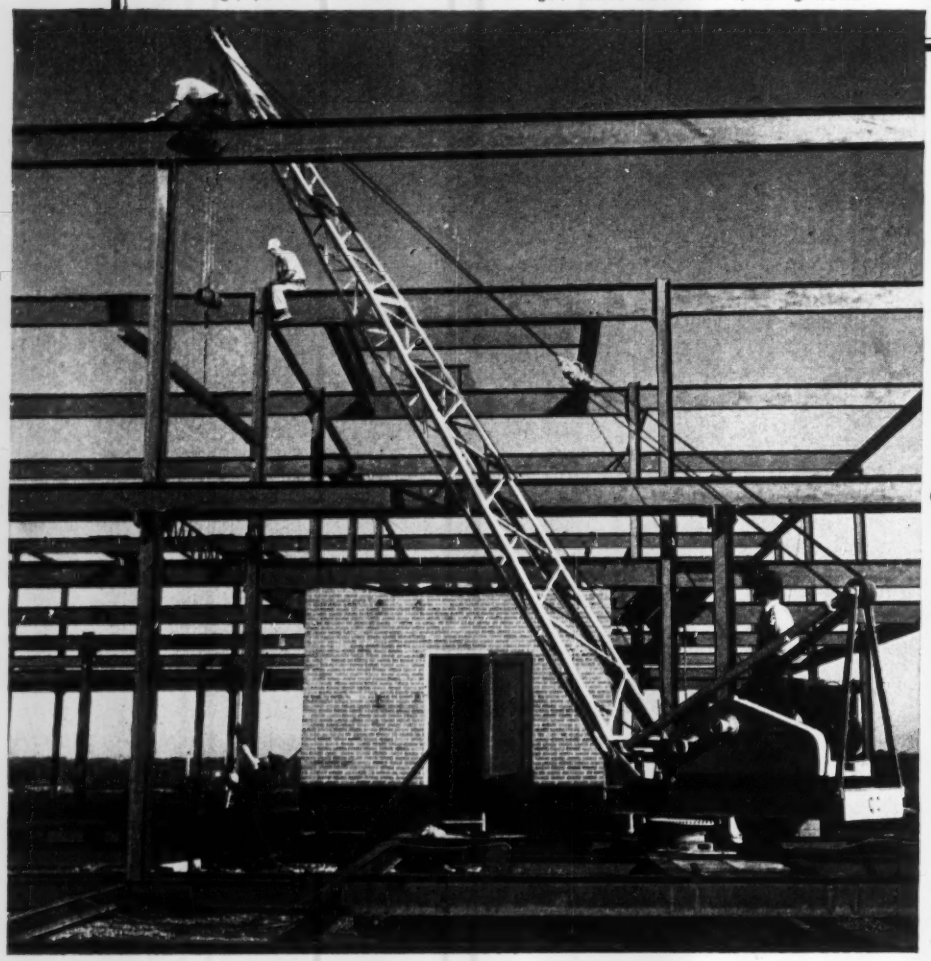
The complete unit includes turntable, center pin and rollers, rotating platform with counterweight box, A-frame and back-legs, power unit with or without swinger, tackle blocks and operating cables.



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WASHINGTON OBSERVER

More liberal cost allowances for defense contractors are coming. The military expects to have a rewrite of Section 15 of the Armed Services Procurement Regulations by the first of the year.

The rules mostly affect cost-plus-fixed-fee contracts. Early drafts of the regulations show that interpretation of what is an allowable cost will be minimized. They are detailed, spelling out allowables, chapter and verse. The new regulations will cover entertainment, advertising, bonus pay, etc.

The changes will affect manufacturer-suppliers most although the new policies laid down also will apply to such services as construction.

•

Top command on Spanish base construction is being filled out. Being considered for the top staff job under Air Force Maj. Gen. August W. Kissner were two civil engineer admirals: Harold Johnson, of Norfolk, and Algert D. Alexis of New York. Navy Capt. Robert H. Meade, director of Naval petroleum reserves, is slated to be officer in charge of construction.

•

Early building of a super-pipeline from the Gulf to the East Coast has been shelved, but the government still proposes to draw up engineering plans and arrange right-of-way now for speedy construction in case of war.

Oil and tanker interests oppose the 36-in. proposal fearing it would compete too severely with tanker shipping. But government officials in charge of defense planning still want to have a new source of supply in case of submarine warfare.

Another compromise idea: Build a civilian natural gas line now, then convert it to oil products if needed. Petroleum Administration for Defense has asked gas company officials to study the idea.

•

A half-cent increase in the federal gasoline tax is getting serious consideration in the Treasury Dept. It's now 2 cents a gallon, is slated to go back to 1½ cents April 1. But Treasury, looking for revenue sources to replace tax relief coming in January, is talking a hike.

•

NLRB won't step into labor disputes on county roads—on the basis that they're not important enough to interstate commerce. The decision came in a dispute involving a supplier of concrete pipe. State road work, however, will be within the board's jurisdiction.

•

National Bureau of Standards got a clean bill of health from group of top scientists checking its activities. But changes were suggested:

Routine testing of construction materials—done for other government agencies—should be done some place else. Example: Bureau of Reclamation had its cement tested by NBS to see if it meets specifications.

Basic research and more work on all kinds of standards should be expanded to match increased needs of U. S. technology.

Tests of commercial products for other government agencies—the thing that brought on the AD-X2 fight—should be decision of the Secretary of Commerce. Same goes for publication of results.

More money for the bureau would be biggest end-result if Weeks follows through on the committee's recommendations.

★ ANNOUNCING NEW ★

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Brilliant new design opens new era in trucking!

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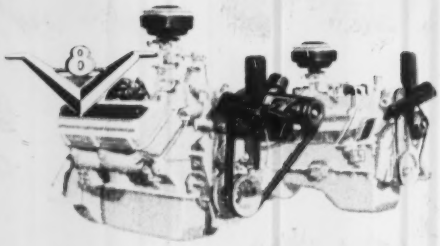

2 GREAT ENGINE LINE-UPS! In addition to cost-cutting 6's, Dodge now offers the most powerful V-8 engines of all leading trucks! Available in 1½-, 2-, and 2½-ton models . . . standard in 2¾-, 3-, 3½-ton! Revolutionary hemispherical combustion chamber for high efficiency! Get free book on engine efficiency and its importance to you at your Dodge dealer's!

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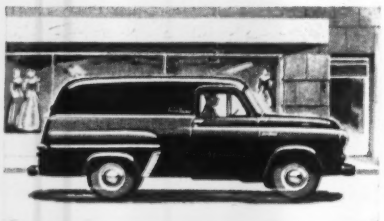

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New! Lower Lines! Pick-up and panel floors knee-high for loading ease! Lower running board for easier entry! Lower hood for greater visibility! New, low center of gravity for road-hugging stability!

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Perry to be Chief of BuDocks

Top Navy engineer post goes to officer who had key role in wartime organization and training of Seabees

Rear Adm. John R. Perry

Rear Adm. John R. Perry, who had charge of organizing and training the Navy's Seabees in World War II, will become Chief of the Bureau of Yards and Docks Nov. 30.

He will succeed Rear Adm. Joseph F. Jelley, who has been named Director of Construction for the Defense Department in the office of Assistant-secretary Franklin G. Floete (ENR Sept. 24, p. 21).

Selection of Admiral Perry for the top Navy engineer post was confirmed by Pentagon sources last week. The President was expected to announce the appointment this week, upon return from his western trip.

Admiral Perry is now director of the Pacific and Alaskan Divisions, Bureau of Yards and Docks, with headquarters in San Francisco. He succeeded Rear Adm. Lewis N. Moeller at this post on April 30.

Creation of the Naval Construction Battalions, familiarly known as the Seabees, took place under the direction of Admiral Ben Morcell, wartime Chief of the Bureau of Yards and Docks. As the bureau's director of administration and personnel, Admiral Perry was charged with enlisting, training, organizing, equipping the construction battalions and sending them overseas. At the same time, he procured more than 9,000 CEC Reserve officers to serve with these units. For his part in creating the Seabees—which became a 250,000 man force—Admiral Perry received the Legion of Merit.

A 1923 graduate of the Naval Academy, Admiral Perry previously had attended Rice Institute and Massachusetts Institute of Technology. After sea duty and further schooling at Annapolis, he went to Rensselaer Polytechnic Institute for bachelor and master degrees in civil engineering.

He was transferred to the Civil Engineer Corps in 1927. Following a short tour of duty at the Bureau of Yards and Docks, he had duty at the Naval Station, Guantanamo, Cuba; the Ninth Naval District, Great Lakes, Ill.; Naval Air Station, Pensacola, Fla.; and the Sixteenth Naval District Cavite, Philippine Islands.

In August 1944, Admiral Perry was designated officer-in-charge, Hawaiian Area, Naval Construction Brigades, Service Force, Pacific Fleet. He became commander, Construction Forces, Philippines, with 35,000 Seabees in the Southwest Pacific under his command in February 1945 returning to the United States in December 1945, Admiral Perry was assigned as public works officer at the Naval Academy. He held that post until 1948 when he was assigned to the Bureau of Yards and Docks as assistant chief of operations. In June 1951, he was transferred to the Naval Construction Battalion Center, Port Hueneme.

Moreell named to Hoover Commission

Naming of Admiral Ben Moreell, chairman of the board of Jones & Laughlin Steel Corp., to head the task force on water and power resources, has got the Hoover Commission's wheels turning in the highly controversial field of federal public works.

Appointment of Moreell by former President Hoover is significant in relation to the broad scope of the present Hoover Commission's charter from Congress—much broader than the reorganization directive given the old commission that reported to former President Truman.

The new Hoover Commission is charged with the job of telling President Eisenhower and the Congress what businesses the federal government should get out of—in addition to recommending a regrouping of executive agencies to handle the functions that are left.

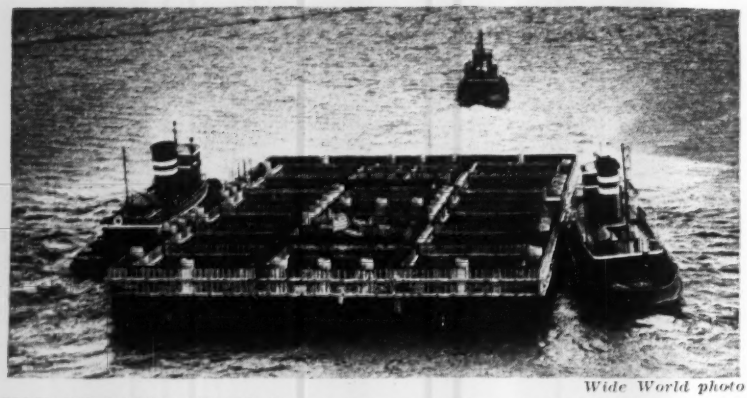
Hoover is about ready to appoint the remaining members of the task force. The commission will meet again Nov. 16, and the chairman wants to have the task groups organized before that date.

Once the task force is completed, Moreell will call an organization meeting. At that time, presumably, the task force will set up its guiding committee and separate task groups to study subdivisions of the whole water and power resources field.

In Moreell, Hoover has a man who has made an outstanding record both inside and outside of government. He served eight years—two terms—as Chief of the Bureau of Yards and Docks, and is known as the "Father of the Seabees." Since leaving the Navy—promoted to full admiral—Moreell has been top man in Jones & Laughlin. He is an outspoken exponent of free enterprise, but he maintains balanced judgment as to the place of government in resources development.

Newman-Schmidt photo

Adm. Ben Moreell



Wide World photo

BUOYANT FOUNDATION, first of eight for the New York State Thruway bridge across the Hudson River, was towed 10 miles from construction site to bridge site.

Concrete caissons towed to bridge site

Eight reinforced concrete caissons are being driven into place to form foundations for the Tappan Zee bridge between Tarrytown and South Nyack, N. Y. Built on dry land at Haverstraw, N. Y., 10 miles north of the bridge site (ENR July 9, p. 33), the huge boxes were towed down the Hudson River to their permanent location.

The bridge, located at the widest part of the Hudson, known as the Tappan Zee, will carry six lanes of the New York State Thruway and will be 15,300 ft long. The main spans, of steel cantilever truss construction, will be 602-1, 212-602 ft (ENR April 23, p. 25). Towers for these and four contiguous spans will rest on the eight boxes.

Submerged, the watertight caissons will have sufficient buoyancy to support 80% of the dead load of the bridge. Piles, driven through vertical cylindrical openings in the boxes, will carry the other 20% plus live loads. The openings for the piles had been formed during construction with light-gage corrugated-metal casings.

The boxes vary in size, but all are large. The first one floated down the river was one of the two largest—100x 190 ft by 35 ft high, weighing 16,000 tons.

Because if completed to their full height they would draw too much water to pass through the river channel, the boxes were constructed to within 5 to 10 ft of their final height and floated with the formwork for the rest in place. They will be brought to a 40-ft height at the bridge site.

The eight caissons were built for Merritt-Chapman & Scott Corp. by Corbetta Construction Co. The same contractors last year built three similar substructure sections for Pier 57 in New York City (ENR July 31, 1952, p. 36). MC&S is currently constructing 23 piers for the Tappan Zee Bridge, including the eight that will be founded on the buoyant boxes.

Raritan trunk sewer contracts are signed

A 30-year drive to clean up New Jersey's Raritan River ended last week when 19 municipalities and industries signed service contracts with the Middlesex County sewerage authority for participation in a $22.5-million trunk sewer program.

The sewer will start in Bound Brook in Somerset County and extend to an outfall two miles in Raritan Bay. Next month the authority will authorize a $1-million loan to underwrite engineering costs and procure construction bids. Work is expected to start late in 1954 and by the middle of 1956 the sewer is to be in operation.

Subway extension job is planned in Chicago

Bids have been called for a Chicago subway extension, involving twin half-mile-long tubes along the route of the Congress Street expressway now under construction. The project, on which bids will be opened Nov. 5, is estimated to cost $3 million and to take 18 months to complete.

The tubes will be an extension of the present Milwaukee-Dearborn-Congress subway from the west bank of the Chicago River to South DesPlaines Street, where connection will be made with a ramp and portal section.

A half mile west of DesPlaines Street the subway trains will enter the median strip of the depressed Congress Street expressway and continue along the open cut route to the city limits.

Construction of the subway extension will require underpinning the post office building and relocation of a portion of the Chicago freight tunnel.

Reclamation issues

Federal policies are aired at the annual conclave of irrigation groups

"A better definition of the duties and responsibilities is needed for resource development functions of the Bureau of Reclamation, Corps of Engineers and Department of Agriculture" declared one of more than 30 resolutions adopted by the National Reclamation Assn. at its annual meeting in Reno, Nev., last week.

The association, consisting largely of irrigation groups, also resolved that the civil works functions of the Corps of Engineers should not be integrated with the Interior Department.

Tabled was a resolution requesting that the association be permitted to review and comment on proposals by an Interior Department study team to reorganize the Bureau of Reclamation.

Contentions made that a favorable "climate" now existing between the association and the bureau might be disturbed led to the decision not to push for this privilege, although it was a close vote of nine states to six (with two abstentions). Reclamation Commissioner W. A. Dexheimer earlier had told the group that these recommendations are now before the Secretary and that they will be made known shortly.

The association heard Interior Secretary Douglas McKay, taking note of the budgetary problem facing the country, declare: "We cannot look to a greatly accelerated reclamation program in the immediate future. Rather it will be a program of continued normal growth."

C. P. Peterson of Lincoln, Neb., president of NRA, cited the nation's rapid population increase as emphasizing the necessity for planning and building now for projects needed in 10 or 20 years. He criticized the federal government's "no new starts" policy and charged that the present functioning of the Bureau of the Budget is one of the roadblocks in the path of future development in the West.

Tax exemption

An opinion by the Colorado Supreme Court has held that general contractors engaged in heavy construction projects such as highways, dams, sewage plants, public buildings, etc. are exempt from the state's ton-mile tax on common carriers. The case was taken to court by the Colorado Contractors Assn. and two members of the group.

Cheaper and faster sludge digestion methods proved by plant experience

Benefits of gas recirculation, sludge thickening are told at meeting of sewage and industrial wastes federation

How to cut the time, space and cost of sludge digestion was the number one question before the Federation of Sewage and Industrial Wastes Associations at its 26th annual meeting in Miami, Fla., last week. And three speakers came up with answers.

- Recirculation of digester gas not only affords positive and economic control of scum, but allows appreciable increase in digester loading: Ralph Fuhrman, deputy director of sanitary engineering, Washington, D. C.
- Recirculation of gas makes it possible to digest sludge in one-third the usual time: Prof. Philip Morgan, University of Iowa.
- Thickening of sludge (concentration to 11% solids) before digestion permits a continuous process that raises conventional digester capacity: Wilbur Torpey, Department of Public Works, New York City.

All three men reported plant-scale experience to prove their points. Significance of their claims was indicated by the fact that each had a sewage works manufacturer in support—the three patentable ideas already having been spoken for by Pacific Flush Tank Co., Chicago Pump Co., and The Dorr Co., respectively. General approval of their proposed methods was voiced at the meeting.

The method of gas recirculation developed in Washington was described in ENR (Aug. 13, p. 115). Professor Morgan's application of gas recirculation, tried at the Columbus, Ohio, sewage works for the last several months has convinced Superintendent James H. Blodgett on "the practicability of accelerated sludge digestion by means of gas diffusion to bring the seed sludge, raw sludge and gas into intimate contact."

Wilbur Torpey, working with New York's Bowery Bay plant and the sewage from 350,000 people, has come up with a new process for thickening sludge so that only one-third the former volume has to be pumped; need for secondary digestion has been eliminated; and high-rate digestion is possible in one-quarter the space required conventionally for unthickened sludge. Savings of $2 to $3 per capita in digester construction costs are envisaged—with lower operating costs.

Industrial wastes got a big play at this meeting, in spite of the relatively small number of industry's sanitary engineers in attendance. Audiences heard of U. S. Steel's "multi-million-dollar" waste treatment plant at Fairless Works on the Delaware (ENR July 17, 1952, p. 44), of General Electric's $750,000 metal finishing waste plant in Erie, Pa., and of the intensive period of basic and applied research into waste disposal problems in which industry now finds itself. Sentiment was also expressed that industry should de-emphasize the research; build the plants to treat its wastes; then make them work.

PHILIP F. MORGAN hails faster digester methods—keynote of 26th annual meeting at Miami.

LOUIS J. FONTENELI takes over as president of Federation of Sewage and Industrial Wastes Associations.

A very lively, if non-conclusive, session on the moot questions of stream classification and effluent vs. stream standards as they affect industry was led by Purdue's Prof. Don Bloodgood. One constructive suggestion emerging was that industry could well offer to pay cost of extra treatment it might cause in the downstream waterworks; rather than bear the cost of waste treatment that would abate pollution of the river. This came from H. L. Jacobs, waste consultant for (but not speaking officially for) E. I. du Pont de Nemours & Co. He argued for using the assimilative capacities of streams: "It is uneconomic to do otherwise."

The inequities of effluent standards, remaining fixed while seasonal and other factors change, were pointed out. And so were the advantages of rational, and flexible, stream classification.

L. J. Fontenelli, supervising engineer of the Rahway Valley Joint Meeting, N. J., assumed the presidency of the federation; David Lee, chief sanitary engineer of the Florida State Board of Health was elected vice-president. The organization's meeting next year will be in Cincinnati.

103 miles of turnpike surveyed for Florida

Construction of 103 miles of toll highway along the east coast of Florida from Hollywood to Ft. Pierce has been considered financially feasible in traffic and cost studies submitted to the Florida Turnpike Authority.

Cost of the toll road project is estimated at $62 million. With a toll of $2.50 for passenger cars and small trucks for a full-length trip and $5 for large trucks, it is calculated that net earnings in 1956 would be $4,329,000, rising to $11,681,000 in 1980.

The 24-ft-wide lanes generally would be separated by a 20-ft median strip. At 17-mile intervals, the median would widen to allow for construction of service and comfort stations and restaurant facilities. Speed limit would be 70 mph.

Traffic studies were made by Coverdate & Colpitts of New York and engineering studies by three firms: Howard, Needles, Tammen & Bergendoff of New York, Rader Engineering Co. of Miami and Smith & Gillespie of Jacksonville, Fla.

When the legislature created the Florida Turnpike Authority last June, it limited its power of construction to an area extending 110 miles northward from Dade County (in which Miami is located). As the proposed project falls within that area, the authority can proceed to finance it without further action by the legislature.

Construction's mission in civil defense

Public works departments in most target cities have plans for mobilization of equipment and manpower

The amount of effort cities are putting into civil defense varies widely but one thing most CD programs have in common is a plan for mobilizing construction workers and equipment (ENR Oct. 15, p. 21).

Construction's civil defense mission generally is set up in conjunction with the municipal public works department. The PWDs usually maintain the equipment inventories and manpower rosters and devise the mobilization procedures.

Local chapters of the Associated General Contractors line up the support of member firms in the area and, in some cases, sponsor exercises to test the system of summoning contractors and their equipment to assembly areas.

Building trades unions are active in recruiting and, in some places, are taking a hand in training. In Salt Lake City, for example, they're putting up 10 "open sets" to be used for practice in shoring up various types of collapsed buildings and for rescue work.

• **Hard to get up steam**—In an overall sense, however, civil defense has lagged because of public apathy, lack of funds and the reluctance of public officials to call for mass participation until there is a useful service to perform.

The Federal Civil Defense Administration is supposed to set the pace. But, under the existing chain of command and with present financial resources, it's not easy for FCDA to bring about decisive action at the local level.

FCDA's peacetime functions are limited by the Federal Civil Defense Act of 1950 to counseling the states and their localities, setting up pilot demonstration programs and carrying out research; along with these activities are the more tangible functions of setting up emergency stockpiles and allocating federal matching funds to the states for distribution to their target areas. Peacetime relations of FCDA are entirely with the states. Only in an emergency can FCDA exercise any central control over state and local affairs.

For the three fiscal years since 1950, Federal Civil Defense funds have amounted to less than $200 million and, of this amount, matching funds were less than $50 million. Matching funds require a 50-50 participation by the states and are allocated on the basis of population. Many states are requiring local governments to contribute to part of the 50% state share of the costs.

ENR photo by Compton

TEST ACTION—Construction workers representing contractors and city departments go to work to repair "broken main" in night-time simulated bomb attack on New York City's populous Queens County.

• **Emphasis on evacuation**—Policy is to pay only for equipment and supplies beyond normal peacetime needs—attack warning systems, rescue and training apparatus, extra firefighting equipment, medical supplies, etc.

Val Peterson, FCDA head, says the basic concept of civil defense hasn't changed because the size and power of weapons have increased. The basic formula is still—rescue, evacuation and stockpiling.

Local civil defense organizations are putting more emphasis on evacuation plans, particularly in downtown areas, than on designating shelter areas. All matching money for shelter construction was knocked out of the federal civil defense money bill for the current fiscal year.

Following are thumbnail sketches of civil defense programs, with emphasis on construction's role, in 10 of the 25 key cities surveyed by ENGINEERING NEWS-RECORD correspondents:

• **BOSTON**—A monthly exercise, assuming a hit at some point in or near the city, puts 150 paid and volunteer workers through the paces at control headquarters. Detailed directives cover evacuation, rescue, emergency repairs. Six hundred contractors and their employees are committed to report to assembly areas designated by the city building department. Five assembly areas are earmarked for owners of heavy equipment to be under direction of the State Public Works Dept. Utility companies are committed to dispatch skilled personnel to report centers. Detailed vulnerability maps have been prepared. Civil defense considerations are entering into planning of highway bridges and municipal improvements. Evacuation planning has superseded earlier concentration on shelter requirements.

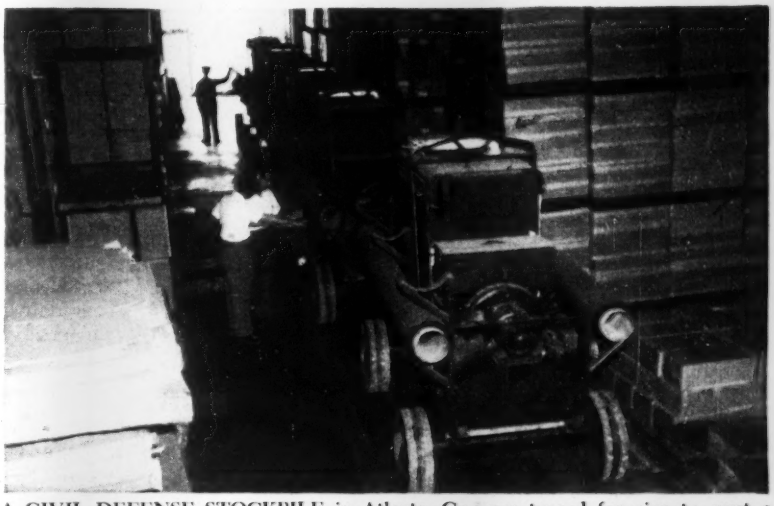
• **DETROIT**—Office of Civil Defense maintains coordinating staff of 50 full-time employees and 12 area centers. CD budget is larger than in most cities—$1.5 million for 1951-52; $800,000 for last two fiscal years. Extensive neighborhood training programs are being conducted. Public Works Dept. has catalogued construction equipment available in city and devised mobilization plan involving 10,000 men. PWD also has listing of trucks and other equipment within 75-mi radius, including Lansing, Port Huron, Saginaw, Flint and Ann Arbor. Out-of-town contractors committed to augment city's construction manpower by 20,000. In event outside contractors are summoned, plans call for their moving in convoy via prearranged

routes, reporting to OCD coordinators at city limits for assignment.

• **SAN FRANCISCO**—Civil defense activities have been pushed vigorously for three years and include all vital occupations: 5,500 doctors, nurses and dentists have disaster posts . . . 10,000 vehicles are tabbed for emergency work and their drivers briefed . . . the bay pilot gives the master of every ship entering the Golden Gate a copy of the waterfront plan . . . the fire department gives rescue training to members of the building trades unions and longshoremen . . . City College gives a course in radiation monitoring . . . a city law prescribes a disaster council and corps, bases civil defense organization on city departments and provides training of volunteers to augment city facilities. All contractors have been briefed and their equipment assigned to posts. Members of building trades council, metal trades council, and longshoremen have been asked to volunteer for leadership courses.

• **PORTLAND**—Oregon's critical target area, over which a Russian bomber flew one June day in 1937 after getting off its course following an Arctic flight, is about to tap a $600,000 tax fund for civil defense. Portland voters approved the one-year, one-mill levy last November. The city's civil defense agency is closely knit to the municipal departments. A $400,000 underground control and communications center is planned with the city putting up half the money and the other half coming from federal matching funds. Semi-annual review is made of equipment listed as available by member firms of the Associated General Contractors and equipment dealers. Equipment inventory includes some 60 large river barges, which could be used to put temporary bridges across the Willamette and Columbia Rivers.

• **CHICAGO**—A three-year-old Civil Defense Corps includes a potential force of 140,000 men and women who would be alerted for action in an emergency. A city official from a corresponding municipal department heads each of these divisions: public works and communications, transportation, traffic and engineering services, public safety, medical, and welfare. There's a $590,000 city appropriation for CD activities this year. Industry and commerce are reported to have spent $2 million on plant and office building protective works. A primary control center and four alternate centers are identically staffed and equipped. The corps maintains an inventory of heavy construction equipment; has a plan for mobilizing equipment and operators.



A CIVIL DEFENSE STOCKPILE in Atlanta, Ga., was tapped for pipe to avert a critical water shortage in five North Carolina communities during a drought in September. Within 24 hr after request was received by the Federal Civil Defense Administration's southeastern regional office, pipe was arriving in Raleigh. Laying of 40,000 ft of pipe and installation of pumping equipment was accomplished in 45 hr. Pumping units in a section of the Atlanta warehouse storing critical civil defense material are shown in the photo above.

• **MILWAUKEE**—One of the nation's few specially designed underground civil defense headquarters—is located under a new fire station. It has a 20-in. concrete slab ceiling, a soundproof radio broadcasting booth, emergency power unit and communications center. Eleven full-time employees staff the headquarters. Trade unions have agreed to recruit and train workers. Plan is to mobilize 63 squads of 25 men each, including each of the construction trade specialties. Utility companies have their own disaster organizations. Building trades have volunteered to set up typical examples of collapsed structures and to demonstrate tunneling methods for use in rescue work.

• **ST. LOUIS**—A 400-page master plan with 20 annexes, written in precise military style, details the civil defense functions here. Civil Defense Corps includes 13 services organized and operated by city departments. The rescue service, with the mission of clearing debris and demolition, is in charge of the St. Louis chapter, Associated General Contractors. A general engineering service—responsible for shelters and bridges and coordination of engineering services—is directed by the Board of Public Service and the Engineers Club of St. Louis. AGC's rescue service has held two exercises in which "token" equipment has been moved to 12 designated assembly areas. It is estimated that construction firms could make available 18,500 men, of whom 500 would be managerial personnel, 12,000 skilled and 6,000 unskilled workers. Drills were held at contractors' expense. No time is wasted practicing work these men do everyday for a living; object of the exercise is to acquaint them with mobilization procedures and first aid.

• **KANSAS CITY**—Participation is down to the neighborhood level with block organizations like Britain's wartime air raid warden setup. City has downtown evacuation plan. Civil Defense Agency maintains close liaison with heavy construction. Department of Public Works has inventory of each piece of equipment, its location and owner. Kansas City's 1951 flood provided a good test of equipment mobilization plans. When an oil fire in the flood waters threatened a wide area, the CD summons had a bulldozer on the scene in 45 min.

• **OMAHA**—There's nothing theoretical about this city's civil defense organization. It had an all-out test in 1952's Missouri River flood, playing a key role in erecting protective works that saved an estimated $60 million in probable damage. Engineers have credited the civil defense equipment inventor with saving three vital days in the struggle against the flood waters. In Omaha—a city where several major construction firms have their headquarters—the Engineers Club is an integral part of the civil defense setup.

• **NORFOLK**—Civil defense plan provides for dispersal of construction equipment to pre-determined points. Construction units have been recruited for repair of essential facilities, demolition and decontamination.

Blackstone photo

O. H. Ammann

Bannsen photo

A. E. Morgan

J. C. Page

Blank and Stoller photo

C. M. Spofford

ASCE adds four names to its honor roll

Four new names will be added to the honor roll of the American Society of Civil Engineers this week when honorary membership is conferred on O. H. Ammann, Arthur E. Morgan, John C. Page and Charles M. Spofford at the society's annual meeting.

• **O. H. Ammann,** a native of Switzerland, has been connected with long-span bridge construction in this country since 1904 when he participated in design studies for the Queensboro Bridge at New York. From 1912 to 1923 he was principal assistant to Gustav Lindenthal on numerous bridge projects, including the Hell Gate Arch and studies for the Arthur Kill bridges for the Port of New York Authority.

As bridge engineer and chief engineer for the Port Authority and later as chief engineer of the Triboro Bridge Authority Mr. Ammann took a leading part in design and construction of the many bridges built by those agencies, including the George Washington Bridge. He also served on the board of engineers for the Golden Gate Bridge at San Francisco. Since 1939 he has been senior partner of Ammann & Whitney, consulting engineers at New York.

• **Arthur E. Morgan** is best known among engineers for his pioneer work in river regulation as head of the Miami Conservancy District following the disastrous 1913 flood in Dayton and other cities of the Miami River valley in Ohio. To the general public he is better known as the first head of the Tennessee Valley Authority, a position which he held from 1933 until 1938 when he clashed with President Roosevelt over a TVA policy issue. As chairman, he set up the engineering and construction organization for the TVA and established its labor policy. Basic TVA policies were largely of his making.

Mr. Morgan served as president of Antioch College at Yellow Springs, Ohio, from 1920 to 1936. In 1941 he established Community Service, Inc., at Yellow Springs to serve small communities and has been active in its work since that time.

• **John C. Page** has been connected with irrigation work in the western part of this country almost continuously since his graduation from the University of Nebraska in 1908. Starting as a topographer for the U. S. Reclamation Service on the Grand Valley project in Colorado, he advanced steadily to the position of superintendent of that project in 1925. From there he went to Hoover Dam in 1930 as office engineer, taking an active part in the early work on that project for five years.

In 1935 Mr. Page was transferred to Washington, D. C., to head up the engineering division of the Bureau of Reclamation under Elwood Mead. A year later, following the death of Dr. Mead, he was named Commissioner of Reclamation. Under his direction the bureau carried forward the Colorado River work as well as such great undertakings as the Central Valley project in California and the Columbia Basin irrigation and power project in Washington. Due to ill health, Mr. Page resigned as commissioner in 1943, however, he continued to work in a consulting capacity until 1947.

• **Charles M. Spofford,** for nearly 40 years, has divided his time between teaching and consulting engineering work. Most of the teaching work was at Massachusetts Institute of Technology, where he graduated in 1893 as a civil engineer. In 1909 he was named professor of civil engineering at MIT, continuing in that capacity until 1940.

In 1914 Prof. Spofford participated in the organization of the consulting firm of Fay, Spofford and Thorndike in Boston and for many years took an active part in the bridge work of that firm.

Lincoln Tunnel

$17.3-million contract is awarded for third tube

Three New York contractors last week were approved for a $17.3-million contract for the main tunneling work on the 7,944-ft third tube of Lincoln Tunnel, Port of New York Authority vehicular route under the Hudson River between New York City and New Jersey.

The joint venturers, lowest of three bidders on the work, are Mason and Hanger Co., Inc.; Arthur A. Johnson Corp., and MacLean-Grove & Co., all heavy construction firms with wide experience in tunneling and subway work. Mason and Hanger built half of Brooklyn-Battery Tunnel, most recent subaqueous tunnel in N. Y.

Total length of the work is 6,258 ft, including 270 ft of rock tunnel on the landward side of a construction-access shaft in New Jersey, now being sunk by Walsh Const. Co.; B. Perini & Sons, Inc., and Peter F. Connolly, Inc., New York. The rest of the distance, including 360 ft of mixed face at the New Jersey and New York shores, will be shield-driven under compressed air from the New Jersey shaft. Terminal point will be a New York ventilation shaft, under construction by Gull Contracting Co., Flushing, N. Y. The New Jersey ventilation shaft is included in contract.

The 31-ft dia tunneling shield is now being fabricated by the American Locomotive Co. at Dunkirk, N. Y. Liner plates are being cast under a separate contract by Bethlehem Steel Co., at Bethlehem, Pa.

Tunnel driving will begin next April, with contract completion scheduled for the fall of 1956. The new tube is expected to be opened to traffic in 1957, according to the Port of New York Authority.

Second and third bids for the new contract were: S. A. Healy Co., Long Island City, N. Y., $20.3 million; and Walsh-Perini, $21.2 million.

Porcelain enamel pointers

A conference on porcelain enamel in the building industry will be held November 12 and 13 at the National Academy of Science in Washington, D. C. One section will deal with the use of porcelain enamel in laboratories and installations handling radioactive materials. Other sessions will take up its fundamental and engineering properties, its architectural and building applications. The conference is jointly sponsored by the Building Research Advisory Board and the Porcelain Enamel Institute.

Laborers' woes:

Higher per capita bite, end of pension dreams probable

Some 1,500 delegates of the hod carriers, building and common laborers' union (AFL) gathered in Washington this week—where two dozen construction laborers met 50 years ago to found one of the basic unions of the construction industry.

And while the delegates and members cheered Joseph Moreschi, their president since 1926, and George Meany, the AFL's president of less than a year, the laborers' leaders were preparing to pour cold water on the golden anniversary cheerfulness.

• For one thing, the executive board urged rejection of pension and welfare fund proposals because of "prohibitive costs."

• For another, the board called for more money in the general fund lest the union's death benefit fund be depleted and union business be curtailed for lack of money.

The occasion was a special convention to amend the constitution and to act on proposals for establishing pension and welfare plans made at the last convention at Chicago in 1951. The next regular convention will be in 1956.

Most important constitutional change was to raise the per capita tax payments to the international—35 cents a month since 1928—to 65 cents a month. Others involved more or less technical changes, including uniform rules between local unions with respect to transfers and good standing.

The executive board based its plea for more income from the membership largely on the needs of the general fund and the death benefit fund.

The international union pays a death benefit of from $100 to $500, the maximum having been raised from $200 in 1946.

The death benefit fund, established in 1938 with a contribution of $50,000 from the general fund, increased to $2 million in 1946 over a period of eight years. Since the higher maximum of $500 went into effect in 1946, the fund now has risen to only $2,877,000.

An actuarial firm, the Wyatt Co., has warned that the death benefit will have to be reduced drastically or the fund will be exhausted if the 7.5-cent contribution to the fund is not increased.

The firm recommended an increase of 10 cents to 17.5 cents a month, or $2 a year, to maintain the fund at a safe level for maintaining existing death benefits and to insure similar payments in the future.

The executive board accepted Wyatt Co.'s recommendation and wanted the per capita tax increased to make it possible and also to increase the money available in the general fund for conducting the business of the international union.

The amount in the general fund was not disclosed.

On pension and welfare funds for members, the executive board concurred in the recommendations of a special committee that the 12 resolutions covering them submitted at the 1951 convention be rejected because of high cost. The costs were estimated by Wyatt Co.

One suggestion was for a pension of $8 a week at age 60 after 25 years in the union. If a member is disabled, age requirement would be waived.

Wyatt Co. estimated this would cost $1.50 a week per member for age retirement alone. Add 10% to 25% to include disability retirement. Add 40% if members now over 60 are covered, too.

The executive board considered the cost "prohibitive."

• **Employers spared**—A proposal which was advanced to make welfare plans costing 5 cents an hour per employee, paid for by contractors, a part of the union's constitution was disapproved by the executive board. It would have required all locals to include such a welfare plan as part of their collective bargaining agreements. The plan would include prepaid medical care for employees and their dependents.

The executive board said there should not be any requirement for negotiating employer-paid welfare plans in the union's constitution which would make it impossible to negotiate an agreement on wages, hours and working conditions without including a health and welfare plan. Besides, it would cost the union too much to enforce such a requirement.

There was no inclination on the part of the union leadership to sign the no-raiding agreement which the AFL and CIO will put into effect for two years on Jan. 1, applicable only to those unions which sign it.

"There's no need to sign something for protection if you don't need it," one leader observed.

Leaders insist they are not having serious jurisdictional problems. Membership has risen from 2,200 the first year (1903) to 45,000 in World War I (1917), to 95,000 in booming 1929, down to a depression low of 17,500 in 1933, then up to 430,000 in World War II (1942) and to a claimed 435,000 today.

Labor briefs . . .

• **Peace pipe passed**—AFL machinists have complied with a federal court order to return to work for Kaiser Engineers on a building project for the Atomic Energy Commission's Hanford works near Richland, Wash. Meanwhile, the cause of the two-week strike—a jurisdictional dispute with millwrights (ENR Oct. 8, p. 357)—was referred to international presidents of the two unions for hashing out.

• **Plenty of pickets**—The Scranton, Pa., Building Trades Council has been locked in a battle with the Associated Pennsylvania Contractors to obtain union contracts on regional highway projects. And when the council was unable to get a new contract with Ryan Brothers, Inc., of Clearfield, it turned out 2,000 pickets to halt work on a non-union road job between Factoryville and Tunkhannock, Pa. The first general work stoppage by construction employees in the area's history was called in order to obtain the large picket delegation.

• **Island pay up**—The General Contractors Association of Hawaii, representing most of the larger builders in the islands, has announced a 10-cent-an-hour wage increase for construction workers effective next Jan. 2. The rate for carpenters will go to $2.10 an hour. The association said the time lag in putting the increase into effect will permit contractors to incorporate the wage increase into bidding on future projects.

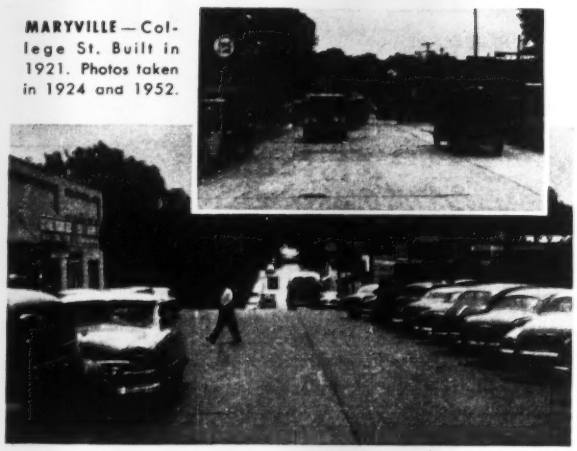
• **Cure takes effect**—Work—begun on a modest scale after a switch in contractors—began again on a power plant at Joppa, Ill. Bowing to a federal court order, ironworkers, who had quit their jobs a month ago in a tiff with Bechtel Corp., ceased deterring other building tradesmen from going to the job site. Observers saw in the court intervention a possible minimizing of strikes and labor tensions which for two years have characterized the Joppa project and an atomic energy plant at nearby Paducah, Ky.

MEMPHIS—N. Willett Street—oldest concrete pavement in Tennessee. Built in 1912. Photos taken in 1924 and 1952.

CHATTANOOGA—Rossville Ave., built in 1923. Photos: 1924 and 1952.

JACKSON—Orleans St. was built in 1918. Photos: 1925 and 1952.

MARYVILLE—College St. Built in 1921. Photos taken in 1924 and 1952.



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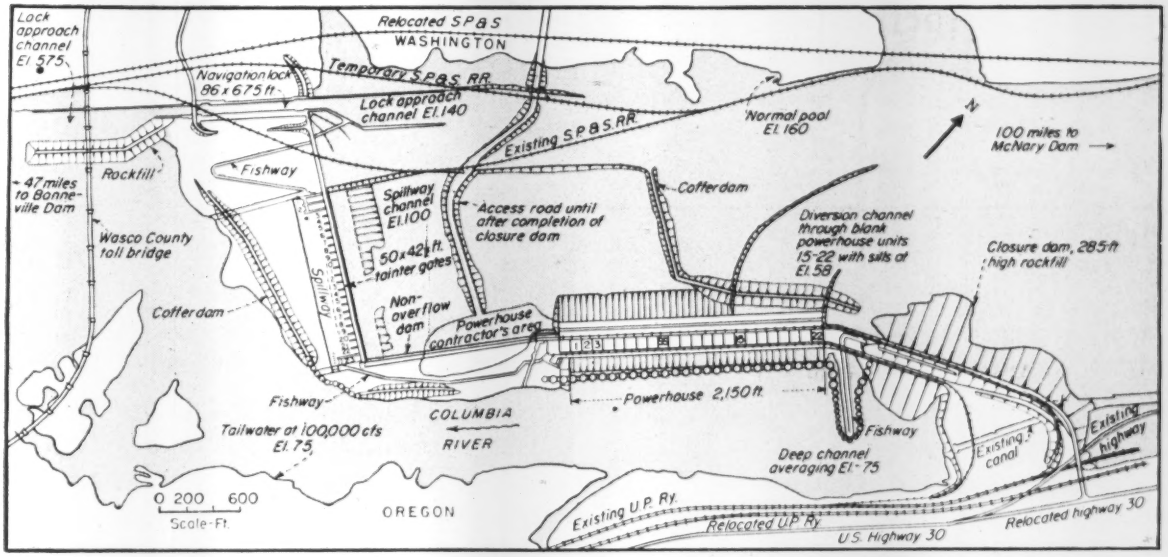
ATHENS—Jackson St., built in 1922. Photos: 1924, 1952.



Working over this large area, it will take contractors several years to build . . .

The Dalles Dam—a $350-million giant

Construction of The Dalles Dam is rapidly reaching a peak effort that will be maintained for several years to come.

This $350-million power and navigation structure on the Columbia River near The Dalles, Ore., is another of the giant federal projects intended to keep power generating capacity in the Pacific Northwest ahead of rapidly increasing demand.

At this writing there is no assurance that the schedule of first power at The Dalles in 1957 can be met. An expenditure ceiling of $26.4 million for fiscal year 1954 (ENR July 30, p. 20) will necessitate voting of more than $75 million a year for the next three years. And whether an economy-minded Congress will vote that much is a question.

From a design and construction standpoint, The Dalles Dam is similar to three other great Columbia River projects built or being built by the Corps of Engineers—Bonneville, McNary and Chief Joseph. All block the flow of the Columbia River with a powerhouse, a spillway section and non-overflow dam sections, and all but Chief Joseph have navigation locks and fishways. (Only Bonneville is now producing power. McNary is scheduled to be on the line late this year and Chief Joseph is due in 1955.)

As the Columbia feeds more water into the ocean than any river in the world except the Amazon, harnessing the river is no easy task.

An unusual condition at The Dalles from a construction standpoint is the fact that much of the work is to be done virtually in the dry on a riverside shelf. And river closure will be accomplished by construction of a 3½-million cu yd rockfill dam blocking a deep river channel with most of the fill placed under water.

Two phases rank with "biggest ever" in dam construction. The 23 tainter gates on the spillway section, measuring 50 ft wide by 42½ ft high, set new records for such units. And cost of the project surpasses any single power and navigation project built to date.

Initial capacity of the powerhouse with 14 units of 78,000-kw rating plus two station service units will be 1,122,000 kw. Space is provided for eight additional units to be installed at a later date when construction of up-stream storage makes them economical. That makes the ultimate capacity of The Dalles powerhouse 1,746,000-kw—slightly more than the ultimate capacity of the Chief Joseph powerhouse and second only to the generating capacity at Grand Coulee Dam.

• **Construction schedule** — Work at The Dalles will be carried out under at least eight major construction contracts, plus many others for highway and railroad relocations, and equipment purchase and installation. Of the three already let, an excavation and cofferdam contract is nearly complete and work has just begun on another that includes substructure for 14 powerhouse units. The third contract, for the spillway dam, has excavation well under way, with the first concrete expected to be placed some time during the month.

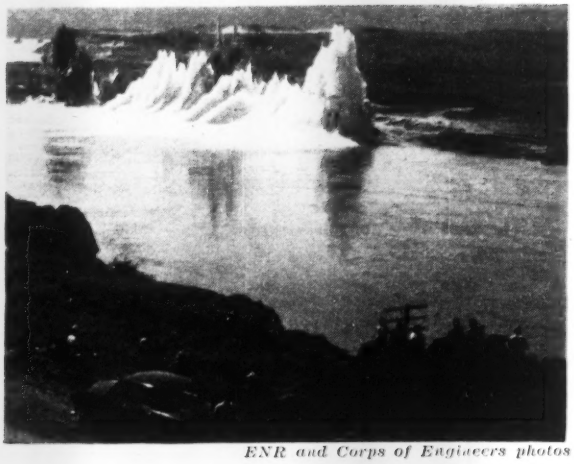
Construction of the powerhouse at The Dalles is to be subdivided into at least four contracts. This is a departure from practice at McNary Dam and Chief Joseph Dam, where single contracts were let covering virtually the entire powerhouse work. The McNary contract, for example, was for $58 million.

Use of several contracts fits in with current federal restrictions against making commitments beyond actual appropriations. However, engineers planning the work claim that it has these added advantages: There is far more competition in the bidding; construction scheduling can be more flexible in case of increases or decreases in appropriations; and more time is provided for detailed design. Plans for The Dalles work include literally thousands of blueprint sheets. If all the details had to be worked out prior to the letting of any contract, initial construction might have been delayed materially.

The successful low bidder on each of the three construction contracts so far has been a different contractor or contractor group. As was expected, that increased the problems of contract administration. But the work is so laid out that there are separate storage and work areas for each contract.

Awarding of the several major contracts is carefully scheduled to stay

So far construction at The Dalles has included:



ENR and Corps of Engineers photos

Underwater drillings and . . . blasting,

dry land drilling and . . .

well within hoped-for appropriations and still result in power in 1957. But if one or more of the dam or relocation jobs is delayed, an entire year may be lost waiting for proper low water or fish-run conditions. This could easily add up to two or more years' delay in power delivery. How the contracts dovetail is explained in the following.

• **Excavation and cofferdams** — First major contract included more than 2,000,000 cu yd of unclassified excavation, mostly in the powerhouse area. Material to be moved is blocky basalt that makes an excellent foundation but requires heavy drilling and blasting. This contract was bid in January, 1952, and went to S. A. Healy Co. for a price which has been adjusted to $5.2 million.

Besides excavation, the contract requires installation of 35 cofferdam cells each 67 ft in diameter and two earth-and-rockfill cofferdams. By July 1, 1953, this work was some 90% completed with completion achieved in mid-September.

Feature of this work was construction of an underwater shelf at El +45 to serve as a seat for the cofferdam cells protecting powerhouse construction. Quarry-type drills mounted on barges drilled holes for underwater blasting.

Inside the cofferdam, excavations were carried down to El 36 and later contracts will take it down to El −23 for the bottom of the powerhouse draft tube concrete. (Normal river level as maintained by Bonneville Dam 47 miles downstream is in the neighborhood of El 75.)

Another distinct phase of the Healy contract was dumping spoil from the excavation into the deep river channel, to form a base for the dam for final closure of the river channel. Some 500,000 cu yd of the ultimate 3½ million cu yd for this underwater rockfill was placed by trucks dumping from an anchored railroad barge and from the shore.

Underwater excavation work was subcontracted to General Construction Co. and cofferdam cell filling was subcontracted to S. D. Spencer Co.

• **Spillway dam** — While the powerhouse excavation work was going on, work began in another area on 2.2-million cu yd of excavation for the spillway dam, tailrace and approach channel. The contractor, Atkinson-Ostrander (a combination of Guy F. Atkinson Co. and Ostrander Construction Co.), started work in October, 1952, under a $14.4-million contract. Excavation is in its final stages and concreting is beginning, with completion set for December 31, 1955.

The spillway dam contract includes only 330,000 cu yd of concrete. And contrary to recent Corps of Engineers practice, no cooling is required. The job also includes 6,000 tons of steel in reinforcing and the tainter gates.

• **Powerhouse, Phase I**—The third major contract was bid in May, 1953. It covers principally the substructure for 14 of the 22 main powerhouse units, and for the station-service unit up to turbine-scroll-case level. But it also includes the upstream gate structure and trashracks built to full height, and the tailrace deck to full height.

Total height of the powerhouse from bottom of the draft tube excavation to the trash-rack gantry deck is 210 ft.

Work on this contract is just getting started and cannot get in full swing until the Healy contract is completed. It is scheduled for completion Dec. 1, 1955. The contract is for $29.8 million and is held by a combination of nine mid-Western contractors headed by the Donovan Construction Co.

Major item is 600,000 cu yd of concrete which was bid at $20.22 a yd. Also included is 33,000 tons of reinforcing steel.

Architect-engineer for Phase I of the powerhouse, retained to do the detail design, is Sverdrup & Parcel, Inc. Phase II is the superstructure for Phase I. But that will not be bid until the work on Phase I is substantially completed.

• **Powerhouse, Phase III** — The next big contract, besides the work now under way, is being called for bids this fall. It involves the powerhouse substructure for units 15 to 22 and is expected to cost in the neighborhood of $25 million.

Work on this substructure for the final eight units of the powerhouse comes next for several reasons. First, there is room for another contractor to work in this area. Secondly, the river flow will have to be diverted through this portion of the powerhouse as the closure dam is being built and before the spillway and navigation lock are completed. At a later date, when these have been completed, stop-logs will be dropped across the openings in all eight bays so that they can be concreted. But this won't happen until 1956 or 1957.

• **Navigation lock** — Under present schedules, the navigation contract will be bid in the spring of 1954 and will run to around $17 million. This structure will be built almost entirely in the dry. In general, the work will be similar to that done at McNary Dam, where the highest lift lock (92 ft) in construction history was built (ENR Sept. 30, 1948, p. 46). However, at McNary the lock chamber was formed by gravity-type concrete walls whereas at The Dalles, the 86x675-ft lock chamber will be built in rock excavation. A relatively thin concrete face will be placed on the wall of this excavation.

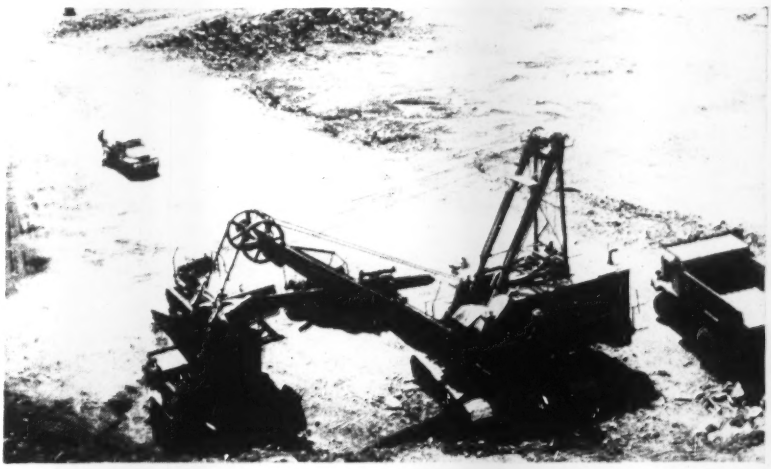
The lift at The Dalles lock is almost the same as at McNary Dam, 90.5 ft.

The filling and emptying system also will be similar to that at McNary except that a different intake will be employed with better hydraulic characteristics.

• **Powerhouse installations** — In mid-1954 first contracts for equipment installation in the powerhouse will be let. There will be dozens of these contracts, and they will include installation of turbines for which manufacturing contracts already have been let. No bids have yet been asked for generators.

• **Powerhouse, Phase II**—In December, 1954, according to present schedule, bids will be asked for a $19-million contract for the superstructure of the powerhouse over units 1 through 16. By that time, much of the substructure being constructed under the Phase I contract will have been completed. And some of the turbines will have been installed.

• **Closure dam**—Final major construction contract on the project will be bid in mid-1955. This will include completion of the 3½-million-cu yd underwater rockfill that will turn the



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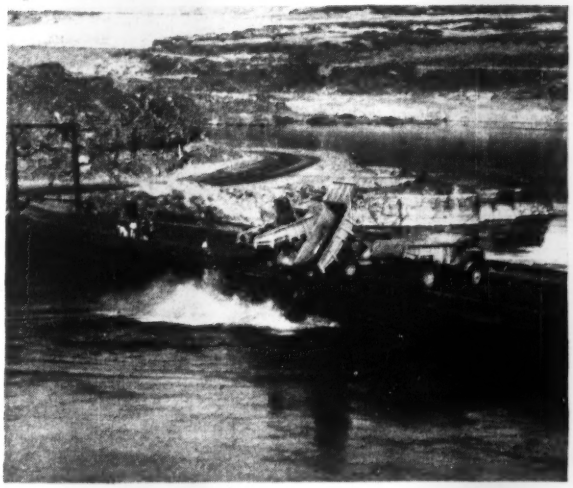


deep water filling and . . .

cofferdam construction

river through the blank spaces for eight units of the powerhouse.

While this work will be the most spectacular to be undertaken at The Dalles it will lack the dramatic aspects of the river diversion operation at McNary Dam (ENR June 29, 1950, p. 27 and Dec. 14, 1950, p. 31) because physical conditions at The Dalles make it possible to follow normal closure procedure.

With an expected flow of 100,000 cfs, the water surface in the river will be at El 75 at the time closure work starts. As the sills of the intakes for the blank openings in the power house will be El 58, it is estimated that the entire flow can be diverted through those openings when the surface of the closure dam has been raised to El 80.

When completed, this rockfill dam, much of which will be built under water, will be 285 ft high above the deepest point in the river channel.

Work on the contract for completion of that structure above the fill now being placed under the Healy contract is expected to start in October, 1953. It must be completed by March of the following year.

Rail lines on the closure dam will permit transport of heavy units to the powerhouse for installation.

• **Relocations**—Work on the dam and powerhouse proper is by no means all of the construction involved. The main line of the Spokane, Portland & Seattle RR on the Washington shore must be relocated for a distance of 14 miles. This will be handled in one contract. On the Oregon shore both the Union Pacific Ry. and U. S. Highway 30 must be relocated. At present planning, this will include four grading contracts plus five bridges in three different contracts. Already bid is a shoofly line that will move the S.P.&S. temporarily out of the construction area.

• **Fish**—As is necessary in every Columbia River structure below Chief Joseph, extensive fish collecting and fish-ladder facilities are required at The Dalles Dam. But there are other complicating factors. The project will drown out the Celilo Rapids section of the river where Indian tribes were granted fishing reservations in an 1855 treaty. The federal government is attempting to settle with the Indians for $23 million—estimated to be the loss that will be incurred by the Indians based on an average annual catch of $700,000.

• **Bridge moved**—Final complicating factor of The Dalles project is concerned with a toll highway bridge being built by Wasco County, Ore. Original location took this bridge across the river at about the location that appeared best for the spillway of the dam, and work was under way at this location. Now it is being built farther downstream. This change resulted in delay of completion of the bridge project for more than a year. The bridge is currently expected to be completed in December, 1953.

The Dalles Dam is a project of the Portland District, Corps of Engineers, Col. T. H. Lipscomb, District Engineer. H. B. Elder is resident engineer.

Design has been carried out under the direction of Ben L. Peterson, chief of the engineering division. John Kemple is chief of the construction division.

Project manager for the S. A. Healy Co. is Nocols Marsch, Jr. Project manager for Atkinson-Ostrander is A. H. Steiner.

Taconite processing in Minnesota presents new water needs

Because of the rapid growth of taconite beneficiation (to supplement "direct-shipment" iron ore), Minnesota authorities are faced with a rising demand for additional industrial water supplies.

This demand comes from an area where needs have not been heavy before—and where water is not plentiful. On the topographic highlands where the iron ranges are located, surface streams generally are small and ground water storage is limited.

The sudden supply problem stems from the fact that taconite contains a much higher percentage of silica than either magnetite or hematite. Consequently, beneficiation means elaborate processing—and any large-scale processing program calls for quantities of water. According to one estimate, up to 50 tons of water are needed to produce a single ton of the concentrate for shipment (ENR Dec. 11, 1952, p. 42).

• **Water demands**—Five processes are currently applied to taconite to produce a commercially valuable product for blast furnaces: Washing, jigging, heavy-density separation, magnetic separation and flotation. These treatments are used singly, or in combinations that cause wide variation in water requirements.

The average wash plant—according to figures based on Minnesota pilot-plant operations—needs from 565 to 930 gpm makeup water in its circulation systems.

Make-up water for a 100-ton-per-hour jigging plant averages around 500 gpm.

In many heavy-density separation processes, water is recirculated and reclaimed so that a plant having a capacity of 100 tons per hour uses from 250 to 350 gallons of make-up water a minute. When water is not reclaimed, the rate rises to about 750 gpm.

Magnetic separation plants require about 10 times that of a heavy-density or wash plant, depending upon treatment used.

A 100-ton-per-hour flotation plant uses around 3,500 gpm in the circulation system; of this, one-fifth to one-tenth is make-up water.

• **Water supply**—State and local authorities are confronted with a dual problem: to prevent present overdrawing of ground and surface water supplies, and to insure sufficient quantities for the future. Not only mining must be considered, but also the population expansion which will result when larger and completely new towns spring up in the area.

On the federal front, the Water Resources Division of the U. S. Geological Survey plans to compile and study all available data pertaining to water resources of the range region. Cooperating in this venture are two Minnesota agencies: the Division of Waters of the Department of Conservation and the Iron Range Resources and Rehabilitation Commission.

The following program is under consideration:

(1) Bedrock geologic mapping, including all information available on drill holes, existing wells, rock exposures, etc. This would aid in outlining groundwater basins and preparing geologic cross sections.

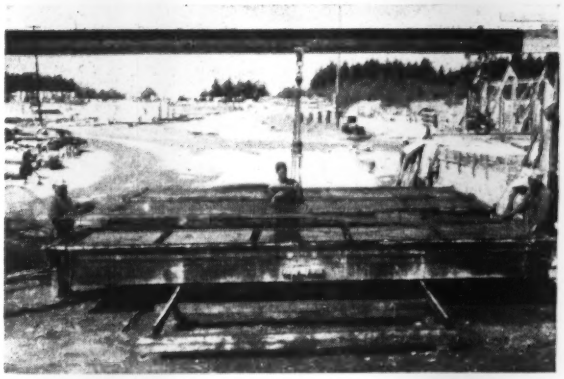
(2) Surficial geologic mapping, including data on the thickness and extent of glacial deposits.

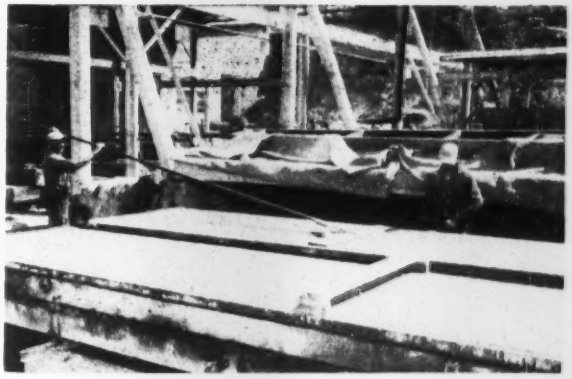
(3) Water-table mapping, based on available measurements of water levels in wells, mines and pits. This would show the ground water's direction of movement plus probable areas of recharge and discharge.

(4) Inventories of the pumpage from wells, pits and mines.

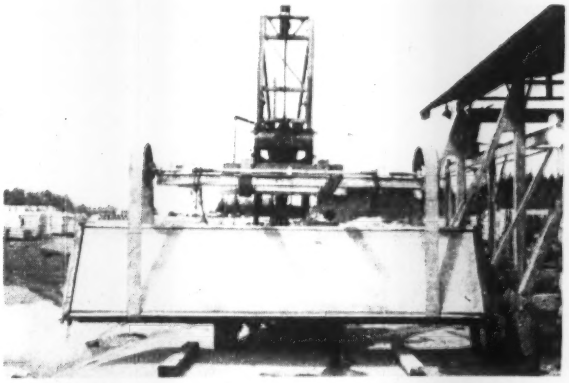
(5) Analyses and interpretation of all data so as to outline potential water sources.

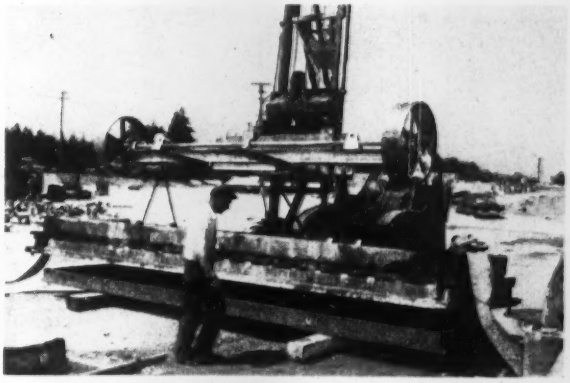
This work would be but a preliminary step in solving the long-range water supply problem. A more detailed investigation must be aimed at improving all the geologic and hydrologic information necessary to plan for changing future conditions.





PLASTIC FORMS for precast concrete panels (left) are filled with concrete, then rolled into curing chamber (right).





FLIPPED OVER by a fork-lift truck equipped with belts and pulleys (left), a form is stripped by the fork lift (right).

Building panels precast in plastic forms

With only five forms, Associated Sand & Gravel Co., of Everett, Wash., has precast more than 1,000 reinforced concrete floor and roof panels for naval buildings in western Washington. These forms are made of glass-fiber reinforced plastic.

The panels range in size up to 4½ x 20 ft. Each consists of a 1¼-in. thick top slab and a pair of longitudinal edge joists 8 to 10 in. deep braced with transverse ribs on 4-ft centers.

Each form is a single sheet of plastic ⅛ in. thick. Believed to be the largest unit of such plastic ever made, it was fabricated in one day by a boat builder who is producing plastic hulls. It is supported on wood ribs in a frame composed of 8-in. steel channels braced diagonally with 2x 2-in. steel angles.

Although the plastic forms have a high initial cost—about $5 per sq. ft.—they are virtually indestructible, says George P. Ducey, of Associated Sand & Gravel Co. Any holes that may occur can be patched easily. The forms are lightweight and can be moved by hand, and they impart a desirable texture to the concrete.

For mobility, the forms and frames are mounted on platforms equipped with flanged wheels, enabling them to roll on rails.

• **Precasting procedure**—First step in fabricating the panels is the placing of reinforcing steel in the forms. This steel consists of main bars ⅜ in. in diameter, which are welded to ½-in. dia bars, and 2x2 in. by No. 10 wire mesh, which is tied to the bars.

Truck-mixed concrete is placed in the forms, which are coated in advance with a form oil. The mix, with ¾-in. maximum-size aggregate and a slump of 1 to 1½ in., contains 8 bags of cement per cu yd. Vibrated internally and by a machine on the screed, it attains a strength of 6,000 psi in seven days.

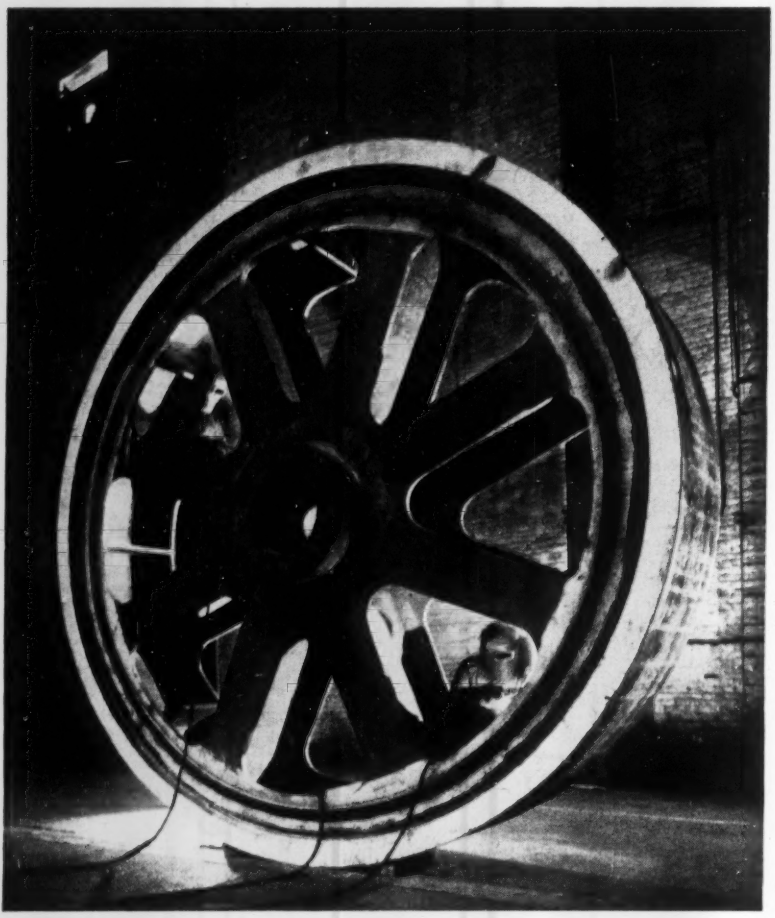
After the concrete has set, the forms are rolled into a steam curing chamber, where they stay for 5 to 12 hours at 130 F. The plastic forms are reported to be advantageous for this process because they permit an even curing not possible with bulkier forms.

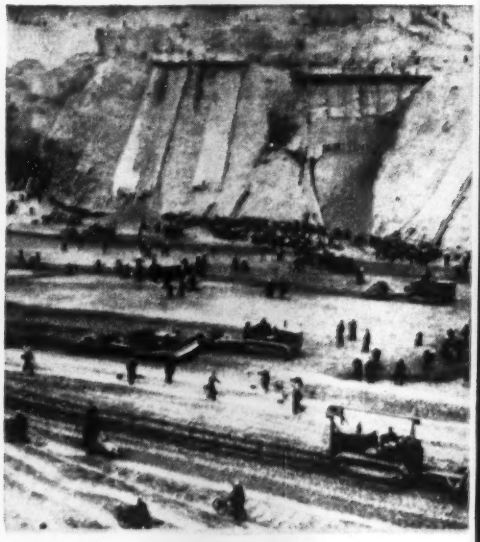
• **Machine aids stripping**—The forms are stripped with the help of a fork-lift truck equipped with a high-lift tower. A horizontal axle with large steel pulleys at both ends is set on a steel I-beam across the forks, which are raised to a height of 12 ft above the ground. Flexible 8-ply belting, 8 in. wide, is placed over both pulleys to pick up a panel and the rolling platform to which it is attached.

Balanced in the belts, the form can easily be turned over by one man. An air brake on the pulleys stops the belts, after the form has been reversed. Lowered to the ground with the concrete panel underneath, the form frame is tied to the truck forks with chains and then pulled loose by raising the forks with the belts removed. (The precaster has applied for a patent on this method of form stripping.)

Panels are moved by lift truck to stockpile and finally to a storage building at Bangor. From there, they are delivered to projects under general contracts held by Hall-Atwater Co., of Seattle, and Grove, Shepherd, Wilson & Kruge, of New York City, or to the Whidbey Island Naval Air Station for use in a hangar under construction by Strand & Sons, of Seattle.

ENGINEERING NEWS-PICTURES



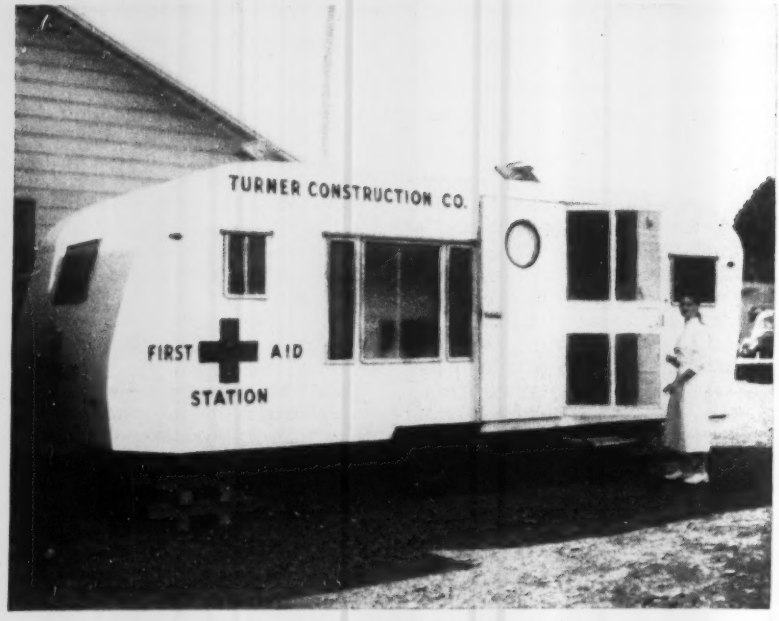


BIG PAYROLL

Near Peiping, China, seven thousand men and seven machines work to complete the first stage of the Kwanting Reservoir project—largest of several under construction—to halt the age-old threat of the Yungting River floods. Started in October 1951, the completed reservoir will have a capacity of about 1.8 million acre-ft. The project eventually will be used for irrigation, hydro-electric power, navigation and water supply for the city of Peiping.

BIG WHEEL ON BRIDGE JOB

This giant sheave is ust one of four being fabricated at the Bethlehem Steel Co. plant in Bethlehem, Pa., to pass cables for a New York project—a $6-million, 3-lane, vertical lift bridge linking Welfare Island with the borough of Queens. Each sheave is 15 ft in diameter, weighs 37 tons, requires 275 lb of weld metal to fill the gap between web and rim. Twelve grooves, about 2½ in. wide, will be cut in the rim to hold cables carrying 515-ton counterweights.



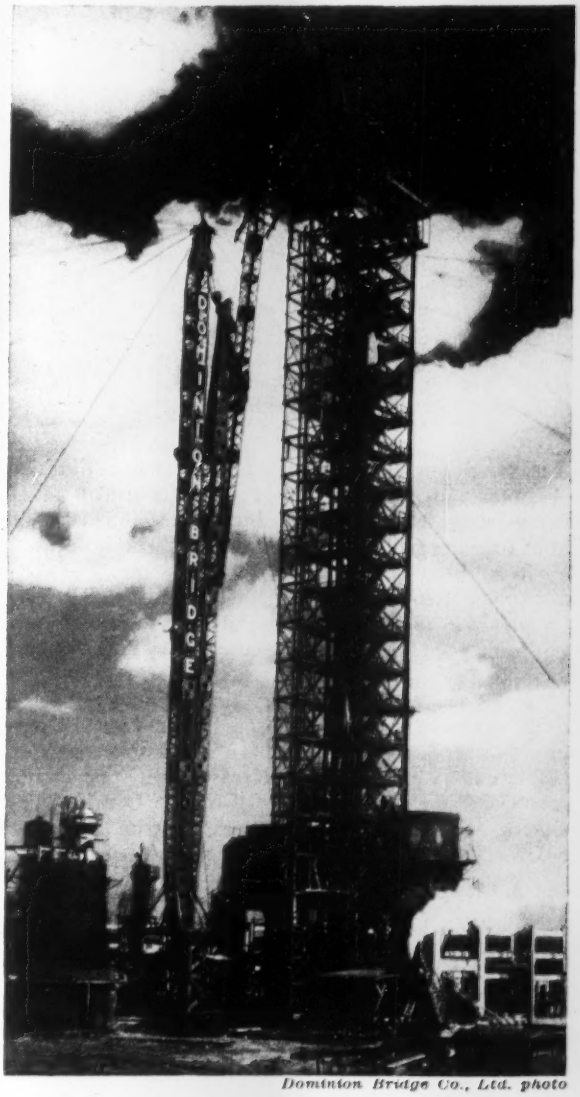
TREATMENTS IN A TRAILER

To reduce time lost through job accidents, Turner Construction Co. uses this trailer as a first aid station. It can be shuttled around the building site (new Poughkeepsie, N. Y., research laboratory for International Business Machines Corp.). The mobile "hospital"—under the eye of a trained nurse—is equipped with infra-red lamp, simple surgical instruments, first aid items, cot, etc. A 3-ft door on each side of the 23 x 8 x 6½-ft unit facilitates handling of stretcher cases.

Wide World photo

VIDEO KNOTHOLE

Chicagoans got a peek last month at the latest gimmick for satisfying the sidewalk superintendents—closed circuit TV. Actually, it was part of a study to determine whether closed circuit TV is useful in heavy construction. The cameras were trained on concrete pouring operations in a 23-story building on Lake Shore Drive. The experiment indicated TV probably would be most effective on jobs covering a large ground area rather than on high buildings.



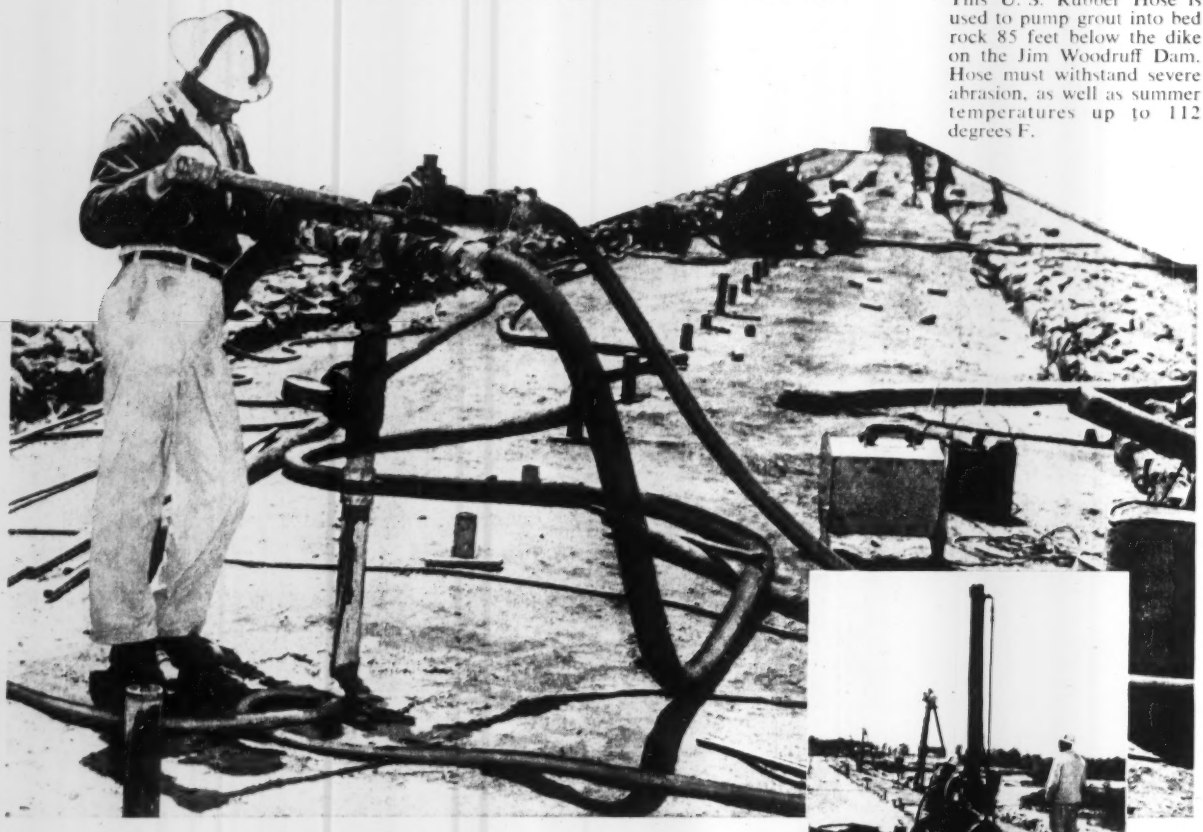
Dominion Bridge Co., Ltd. photo

CANADA'S BIGGEST

The guy derrick shown entering a tower at Sarnia, Ont., oil refinery towers more than 200 ft above the ground. Its 180-ft mast and 160-ft boom are said to make it the largest derrick designed and built in Canada. Having a rated capacity of 150 tons, the derrick was built by Dominion Bridge Co., Ltd., at Lachine, Que., Catalytic Const. Co. of Canada is the contractor here.

Over 8 miles of "U. S." Hose used on the Woodruff Dam!

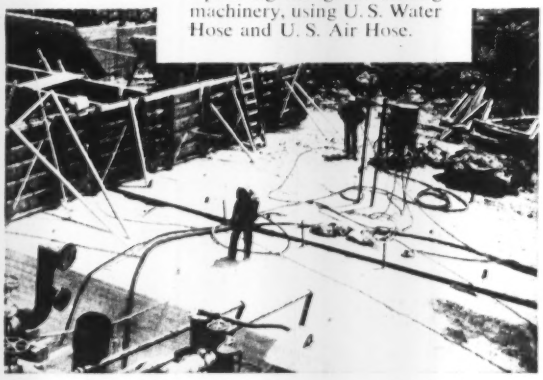
This U. S. Rubber Hose is used to pump grout into bed rock 85 feet below the dike on the Jim Woodruff Dam. Hose must withstand severe abrasion, as well as summer temperatures up to 112 degrees F.



Operating the grout drilling machinery, using U. S. Water Hose and U. S. Air Hose.

Yes, in building the great Jim Woodruff Dam in Florida, well over 8 miles of United States Rubber Company hose is being used. Hose for tools and pumps, water hose, grout hose, hydro-blast and hydro-silica hose—ranging from one-half inch to eight inch[es] I.D. The hose used for hydro-blast is used at 2000 lbs. pressure. The contractors' Purchasing Department selected "U. S." hose because of its ready availability and because, in their own words, they felt it was "top-line hose". They did not regret their choice.

"U. S." makes hose for every kind of industrial need, keeps stocks at strategically located centers for fast supply. This service, plus the fact "U. S." insists on making only a *quality* product, are the reasons why you should see "U. S." for hose. Call any of our 25 District Sales Offices, each staffed with engineers, or write to address below.



Hydro-silica machine using a U. S. Wire Braid Hydraulic Hose at 750 to 1000 pounds pressure.

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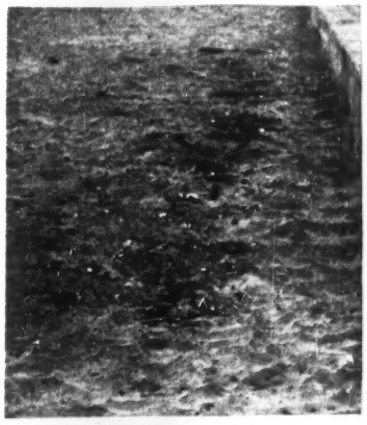
AIRCRAFT FLOTATION-TYPE TIRES carry rake-screen trailer.

Shop-designed rake gets beach clean



BEFORE—typically littered beach.

AFTER—a desirable place to lounge.

The saving of many hours of hand labor and achievement of cleaner beaches have resulted from use of a rake-screen trailer originated in the public works department of the city of Huntington Beach, Calif., and developed further by the PWD of San Diego.

The problem was similar to that of many medium and small sized cities maintaining ocean or lakefront public beaches. In spite of policing, pleas and warnings, the public still deposits tons of litter on the beaches. For most of the communities the clean-up is a hand operation—few of them able to afford the costly, highly specialized machines used by the larger cities.

The rake-screen is mounted on a light trailer with aircraft flotation-type tires. A basket arrangement of screen wire on a metal frame with a 6-in. cutting blade is hung between the wheels, and the entire arrangement may be raised or lowered to adjust the depth at which it digs into the sand. Double-acting short-throw hydraulic cylinders trip and dump the basket.

Litter thus piled is picked up by a fork lift with a screen attachment, and loaded into Army-type 6 x 6 trucks.

The San Diego department claims substantial success with its rake-screen, but experiments are continuous in the effort to find the most effective mesh for the machine. They are working now to develop a vibrator to eliminate balling of wet sand.

Clean Water Rally

Cincinnati plays host to Ohio River group

Dedication of one multi-million dollar sewage treatment plant and ground breaking for another gave Cincinnati the occasion to play host to the Ohio River Valley's Clean Water Rally on Oct. 6.

Rally participants, including 100 regional mayors and Governors Frank J. Lausche and Lawrence W. Weatherby of Ohio and Kentucky, respectively, enthusiastic member-supporters of the Ohio River Valley Water Sanitation Compact, saw the official dedication of the $6-million Little Miami sewage treatment plant (ENR, June 25th, p 40), and groundbreaking for the larger Millcreek plant.

• **Long-range program**—The first phase of Cincinnati's $47-million program was climaxed with the dedication. The Miami Plant, designed to treat 29 mgd, will serve the valley area east of the downtown section of the city until 1980, and is now operating at 65% of capacity.

The 120-mgd Millcreek plant will handle treatment for the western section of the city, while two smaller plants, already past the drawing board stage, will treat sewage from the extreme western portion of the area.

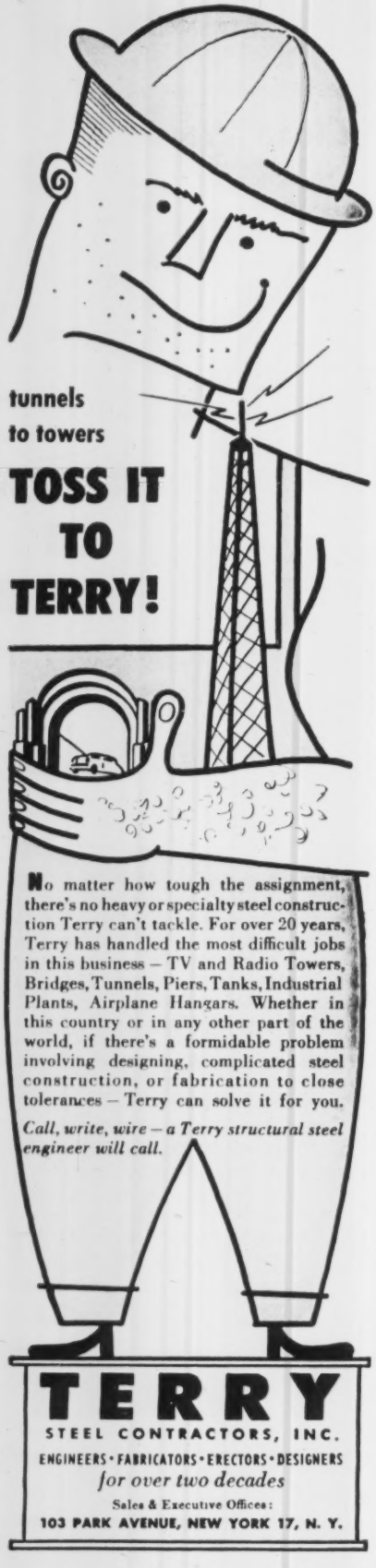
Completion of the Millcreek installation will bring Cincinnati closer to the standards set by the ORSanCo —an eight state agreement to reduce waste content of water resources.

• **Cincinnati leads the way**—The city, second in size only to Pittsburgh, the most populated town in the Ohio Valley, has been the leader in river sanitation for the last five years. Other areas are following, but progress is slow, in fact, many are still only "paper improvements."

The men doing the job are from the states which created the ORVWSC. The eight states are accomplishing, it is claimed, what no state could do alone—controlling pollution of the streams.

Cooperating with Cincinnati are 23 surrounding political subdivisions. In the meantime, 16 northern Kentucky communities banded together to prove that more thinly populated areas can work out an equally beneficial program when they joined to build a $7.6-million plant at Bromley, Ky.

A dozen smaller communities, par-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ticularly in Indiana, completed their sewage projects ahead of the Ohio city, but with the exception of Cincinnati, large centers still have not begun actual building.

• **Here's the progress to date**—In the Ohio Valley—sewered population 10 million—Pittsburgh and 59 participating municipalities are involved in the design stage of a joint $90-million project.

• Of 111 riverside cities with more than 1,000 population, 12 have plants, nine have them under construction, and 34 have received final approval of plans.

• Ten cities, including Pittsburgh are completing final plans, 11 have preliminary plans and 11 more still are discussing plans.

• There has been no action on the part of 24 cities representing a population of 76,000, and it was this latter fact that clearly focused attention on the Queen City's program.

• **Plan had early genesis**—Construction of the Millcreek plant and the dedication of the Miami plant are milestones in a campaign road that traces its beginning all the way back to 1912. However, it was not until 1938 that the wheels were set in motion to make the program a reality.

Through legislation passed by the city council, surveys to formulate a plan were made. Havens and Emerson of Cleveland were retained as consultant engineers and a report was presented in July, 1941.

The report outlined a seven-year program with plans calling for four sewage treatment plants, eight pumping stations and four interceptor sewers.

So far, Cincinnati has kept on schedule in doing her part to bring about a clean Ohio River.

The rally program was arranged by the Cincinnati Chamber of Commerce with Daniel Heckin as chairman. Working with Heckin were William D. Anderson, secretary of the Northern Kentucky Sanitation District, Arthur D. Caster, engineer in charge of sewage disposal for Cincinnati, Edward J. Cleary and Elmer C. Rohmiller of the Ohio River Valley Water Sanitation Commission, Arthur Robinson of the Cincinnati Gas and Electric Co. and Douglas Fuller and Leo Koester of the Chamber.

Fluoridation re-endorsed

At the closing session of the American Dental Association annual meeting recently, fluoridation was re-endorsed—and emphatically—by the body.

Urging that fluoridation be adopted in all communities upon the recommendation of state and local authorities, the ADA, comprising an overwhelming majority of the nation's dentists, termed fluoridation the "direct responsibility of the local community."

Semi-automatic operation is filter plant feature

Several Contra Costa County, Calif., communities are now receiving water processed in a new, almost completely automatic filter plant located at Lafayette, northeast of Oakland.

The $600,000-installation designed with eight beds four (20 x 30-ft units) of conventional type, features automatic operation with the exception of the wash cycle. Due to the relative clarity of the raw water, the filters are expected to need washing only once every four days.

Its Bryant-Colorados Pumping plant is completely automatic with a 12,000-gpm capacity, and will serve 14 tanks and reservoirs in the area.

The new plant, designed for a present-day capacity of 21 mgd, can be expanded to an ultimate capacity of 68 mgd. It replaces the Grant Miller plant, a 4-mgd installation, which will be dismantled at an early date.

The project was designed by the engineering staff of the East Bay Municipal Utility District under supervision of R. C. Kennedy, EBMUD chief engineer.

S. F. air terminal lags, commissioners order haste

The $6.7-million San Francisco airport terminal building, frought since its commencement with delays due to work stoppages and material procurement, has become the focal point of wrath of the city's Public Utilities Commission.

The body has ordered a speed-up claiming a loss to date of between $600,000 and $800,000 in revenues as a result of the delays.

The building, part of a $10-million airport development was scheduled for completion June 14. Extensions were granted to compensate for past problems, but when the Clinton Construction Co., general contractors, recently asked for an additional 109 days commissioners refused to grant them.

Members of the PUC, visiting the airport recently, found that construction—the metal lathing particularly—

lagging. A representative of the subcontractor, Frank Smith Co., said lathers were difficult to get in the San Mateo jurisdiction and he was unwilling to hire lathers from San Francisco due to the necessity of paying travel time and expenses to and from the airport.

The commissioners reminded him that he had signed a contract to finish the work on time, and stated that there would be no extensions unless quick progress was shown.

Municipal briefs . . .

• **Sewage disposal plants** at Oklahoma City were constructed in a sand of high salt content. To guard against heavy maintenance costs, corrosion resistant wrought iron pipe was specified for water jacket, return lines, and also in the construction of raw, hot and cold sludge lines.

• **Milwaukee, Wis.,** will spend $2,800 to prepare a movie explaining a new method of garbage and refuse pick-up. It will show residents how to prepare household refuse for the new system, and will be shown to neighborhood groups in areas where the plan will go into effect.

• **After three years** of debating and surveying, the city council of San Diego, Calif., has ordered a one-way grid pattern for the entire downtown section of the city comprising about 250 square blocks. Put into effect over a five-year period, it will leave only Broadway, the city's main street, in the two-way category.

• **Why bind annual reports?**—White Plains, N. Y. (pop. 45,000), issues its annual report to the taxpayers in the form of a Saturday supplement in "The Reporter Dispatch", the local newspaper.

• **Calling it quits**—Rochester, N. Y., will abolish its unpopular sewer rental charge which was one quarter of the taxpayer's water bill. It was imposed along with a 27% hike in the water rates in an effort to finance city wage boosts.

• **Alaskan project cools**—The Anchorage city council has canceled a contract for construction of a $3-million steam electric power plant. Settlement with the contractor followed abandonment of plans when the city was assured an adequate supply of power from the Reclamation Bureau's Eklutna hydroelectric project, now under construction.

You'll Want This New Bulletin on DORR CLARIFIERS

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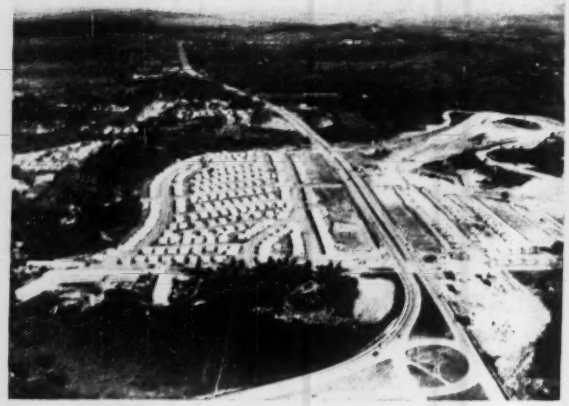


NEW HOUSING in Puerto Rico is wiping out slums faster than in any state in the mainland U. S. on a per capita basis. Since the start of "Operation Bootstrap," 12,000 units have been built at a cost of $80 million.

Photos by Wright

NEW HIGHWAYS AND BRIDGES, in a $30-million road program, are replacing the old, ill-paved system. There are now 2,400 miles of paved highway on the 95-mile long, 35-mile wide island (which had only 1,500 miles of paved road in 1940).

Public programs spark boom in Puerto Rico

Since Puerto Rico's "Operation Bootstrap" (ENR Feb. 15, 1951, p. 32) gained a full head of steam back in 1948, the island's economy and construction industry have boomed. Average income per capita has jumped almost 50% in the last five years, and last year Puerto Rico spent $432-million on U. S. goods, produce, and construction materials.

With a population density of 650 people per sq mi (U. S. average 54), Puerto Rico was often rated as having the lowest standard of living of any U. S. territory until about 1947. At that time, the island became a commonwealth and elected its first governor by popular vote.

• **"Bootstrap"**—Basic driving force behind "Operation Bootstrap" is a host of commonwealth and municipal authorities and agencies. The development work of these groups is financed by bond issues, government appropriations, and aid to industry through tax exemption for new businesses. The Federal Housing Administration is responsible for most of the recently completed housing developments.

YAUCO DAM is one of five dams in the $32-million Southwest Puerto Rico Project, a multi-purpose hydro, irrigation, and water supply system to be completed by 1955. The project will reclaim 25,000 acres of land and provide an annual 100 million kwh of power. "Bootstrap" thermal and hydro projects will furnish an annual 700 million kwh.

NEW INDUSTRIAL CENTER, built up outside San Juan through the construction of a new expressway, is a typical center for the 271 new factories built since 1948. Since July, 1952, there have been built 105 new factories, and since the inception of Operation Bootstrap, Puerto Rico's annual net income has jumped from $600 million to $900 million.

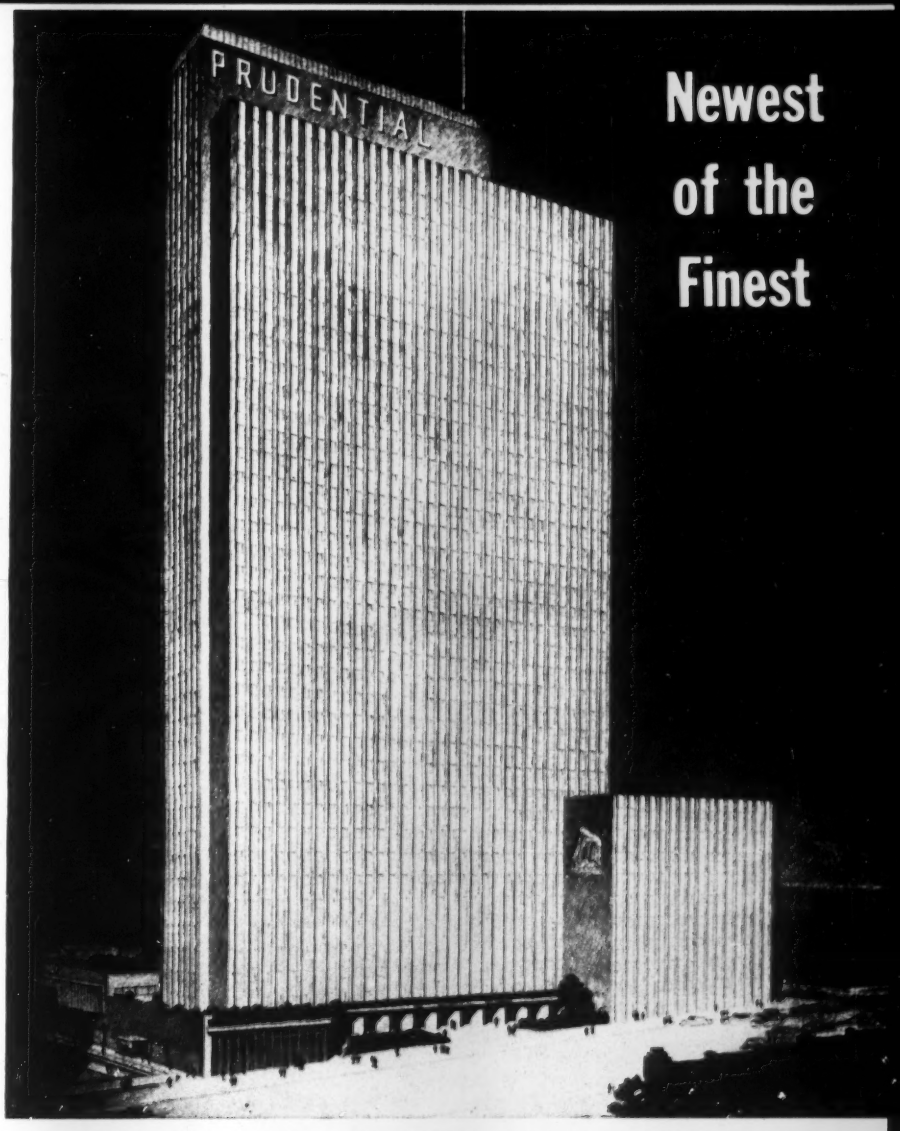
Annual new construction has jumped from around $10 million in 1940 to $72 million in 1952. Factories, thermal and hydroelectric projects, irrigation programs, arterial expressways and paved roads, housing and schools, and water supply, and terminal facilities have been built and are under construction all over the 3,500-sq mi island.

• **There is still a great need** for new construction. In highway construction, for instance: The 28,000 vehicles on the island 10 years ago have increased to 86,000, with the number of vehicles growing more rapidly every year. Next year $11 million is to be spent on highway work.

In housing construction, 10,000 units at a cost of $70 million are to be built in the next few years. It is expected that industrial expansion will account for over 500 new factories by 1960. The demand for electricity continues to grow. Thermal and hydroelectric projects, completed and now in progress, will furnish an annual 700 million kwh, but this power output in a few years won't meet the demand anticipated.

• **Field for U. S. firms**—Continental construction companies are encouraged to go to Puerto Rico. Local firms can often use the help of expert consultants, supervisors, and designers, and because of the wide activity of the construction industry, there is little conflict of interest between local and mainland firms. Equipment manufacturers also have a large market in Puerto Rico, since practically no heavy construction equipment is produced there.

Some construction firms and consultants at work on the island are: Long Construction Co., Charleston, S. C., prime contractor on $60-million worth of FHA financed housing; Sollit Overseas Construction Co., Chicago, Ill., on the $9-million Rio Grande de Loiza water supply project; Buck, Seifert & Jost, New York, on the design of the Loiza project and the $13-million San Juan sewage treatment plant; Jackson & Moreland, Boston, on the construction and design of the $32-million Southwest Puerto Rico hydro and irrigation project and the $4-million San Juan thermal electric plant; Porter-Wagor-Russell, Inc., Miami, Fla., on the $15-million International Airport, San Juan; and Knappen, Tippetts, Abbett, McCarthy did the design for the terminal buildings at the International Airport.



Newest of the Finest

Prudential Building, Chicago • Naess & Murphy, Architects • Geo. A. Fuller Co., Contractors

The new Prudential Building will soon rise 600 feet above the shore of Lake Michigan, and become a distinguished addition to Chicago's skyline This mid-America headquarters of the Prudential Insurance Company will contain more space than any other office building in America's second largest city

As a building, it will take its place among our country's finest structures and is a perfect example of the features a well-informed investor is willing to put into the space he plans to use and rent. For instance, to prevent future obsolescence and to meet the increasing requirements of modern electronic office equipment, architects Naess & Murphy have prepared the new Prudential Building to handle the highest electrical load of any office building yet built. To do this job easily, and to permit layout changes and additions at minimum cost, Robertson Q-Floor construction is being used This strong, light-weight, steel, cellular structural floor is the only construction material available which provides easy electrical access over every 6-inch area of the entire exposed floor. For more good reasons why fine new buildings all over America have turned to Robertson Q-Floor construction, write for literature.

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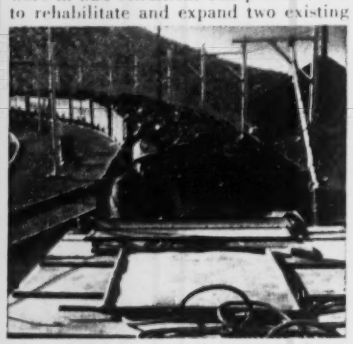
what's NEW in Engineering

Laboratory facilities for engineering research are available to individuals and groups with worthwhile projects at Richmond Engineering Field Station, administered by Department of Engineering, University of California. Charges are based on actual expenditures with appropriate overhead. For information, write Institute of Engineering Research, University of California, Berkeley.

Rebuilding a near-ghost mine at Sunnyside, Utah, for greater coking-coal production with higher efficiency, is a current major project of Kaiser Engineers. The original Sunnyside mines, opened in 1896, were in bad condition. The problem was to rehabilitate and expand two existing



mines and open a third to raise coking-coal production from 1,000,000 to 1,715,000 tons per year. We'll send you a reprint of an article by Wesley Hyatt and R. G. Heers in *Coal Age* which tells the full story of Sunnyside's emergence from a "near-ghost" to one of the most efficient and modern coal producers in the West.

A $50,000 bonus goes to the first person to bring in a Tennessee oil well that will produce 50 barrels a day for six months, according to a new state law. Only 35 wells are now producing in Tennessee, but geologists think the State has rich oil possibilities.

When it comes to research, preliminary engineering studies, engineering design and layout, estimating, preparation of specifications, construction programing, negotiation of contracts, and procurement and expediting of materials and equipment—call or write: Kaiser Engineers Division of Henry J. Kaiser Company, Kaiser Building, Oakland 12, California.

MEN AND JOBS

Karl Terzaghi

Albert E. Cummings

Reelected to top jobs in world soil mechanics body

At the Third International Conference on Soil Mechanics and Foundation Engineering, held in Zurich, Switzerland, in August, Prof. Karl Terzaghi of Harvard was reelected president, and Albert E. Cummings was reelected as vice-president for North America. Mr. Cummings is director of research of the Raymond Concrete Pile Co., New York.

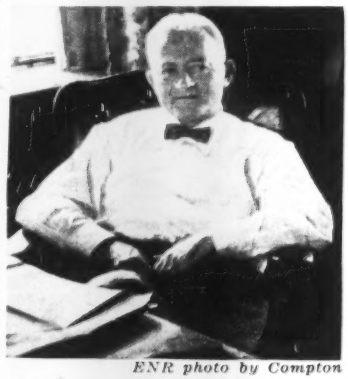
The conference this year had a record-breaking attendance of 800 compared with 500 at the previous meeting in Rotterdam in 1948. In addition to attending a full week of conference sessions, 350 of the delegates made a four-day tour of dam and other construction in Switzerland.

Careers . . .

• **Government Appointments**—Two Bureau of Reclamation engineers are serving in Pakistan with the Foreign Operations administration: **Forrest E. Byrns,** as an advisor on national water resource problems; **Gilbert Drake,** as an advisor on construction management-type contracts . . . Four new regional directors have been named for the Federal Housing Administration. **H. Miller Day,** owner of a general finance agency, will head the Utah district. **Joseph P. Donnelly,** former Buffalo, N. Y., rent administrator, will take over in that area. **Louis J. Fellenz, Jr.,** Fond du Lac, Wis., lawyer will be director for Wisconsin. **J. O. Ferguson,** Pawnee, Okla., newspaper manager, will head the western Oklahoma agency.

• **Local government appointments**—**Doyle Singleton** has been named city planning engineer for Abilene, Tex. He has been with Fort Worth's city engineering department . . . **E. C. Brandon, Jr.,** former city manager of Burlington, N. C., has been appointed city manager of Madeira Beach, Fla.

• **Elected**—**Fred Biggerstaff** has been elected president of the North Carolina State Highway Employees Assn. to succeed **Merle D. Adkins.** Other new officers are **J. L. McDonald,** first vice-president; **R. L. Brown,** second vice-president. **Otis Banks** was renamed executive secretary . . . **Leo Blumberg** has been reelected chairman of the Delaware Board of Registration for professional engineers and land surveyors. **Carmel J. Facciola** was renamed board secretary . . . **Edward B. Rice** was elected president of the North Carolina section of the American Society of Civil Engineers. He succeeds **P. D. Davis.** Other officers elected are **Ralph E. Fadum,** first vice-president; **Channing B. Brown,** second vice-president . . . New officers for the Kentucky-Tennessee section of the American Water Works Assn. include **R. P. Farrell,** president, succeeding **Elmer Smith; J. Stephen Watkins,** vice-chairman; **Justin J. Davis,** Tennessee trustee; **Robert A. Fisher,** Kentucky trustee; **J. Wiley Finney,** secretary-treasurer.



ENR photo by Compton

DeSimone leaving MC&S

Ralph DeSimone, 61, former president of Merritt Chapman and Scott, and more recently—since the purchase of control of the firm by Louis Wolfson—head of MC&S's overseas subsidiary, has announced his retirement from active service with the company.

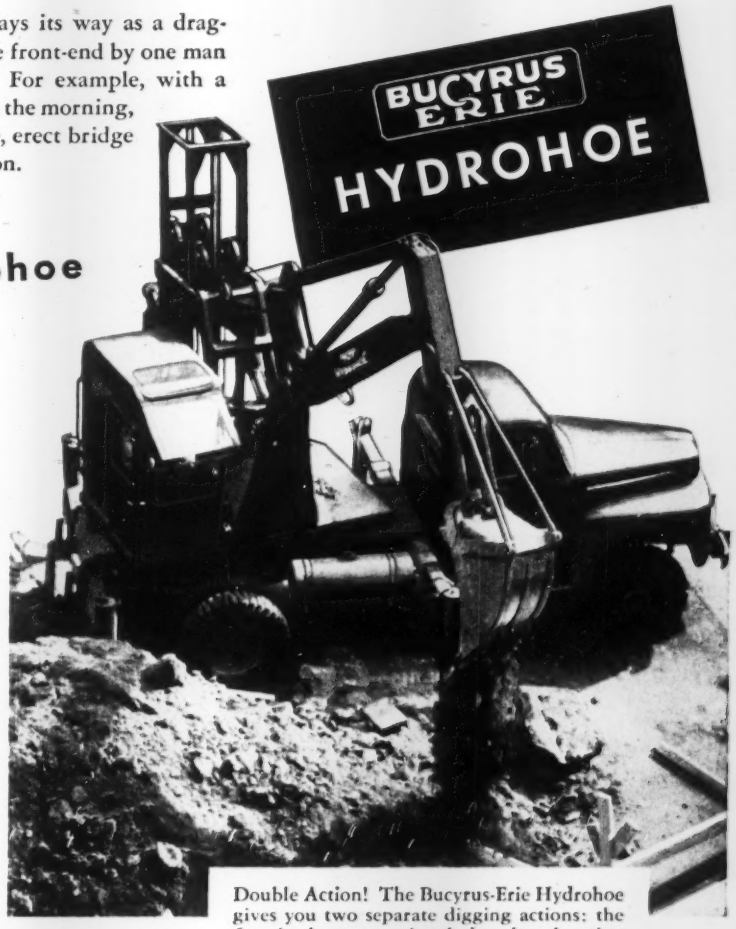
DeSimone began his 37-year career with MC&S as an engineer. He was put in charge of New England operations in 1925, and in 1942 took over direction of the company's marine and heavy construction. By 1945 he was elected a vice-president. In 1951 he became president.

Double-Action DRAGSHOVEL WITH A QUICK-CONVERSION BONUS

THE Bucyrus-Erie Hydrohoe not only pays its way as a dragshovel, but it has been converted to crane front-end by one man in less than one hour (actual time test). For example, with a Hydrohoe you can dig trenches or footings in the morning, then convert to crane front-end and set pipe, erect bridge sections or handle road forms in the afternoon.

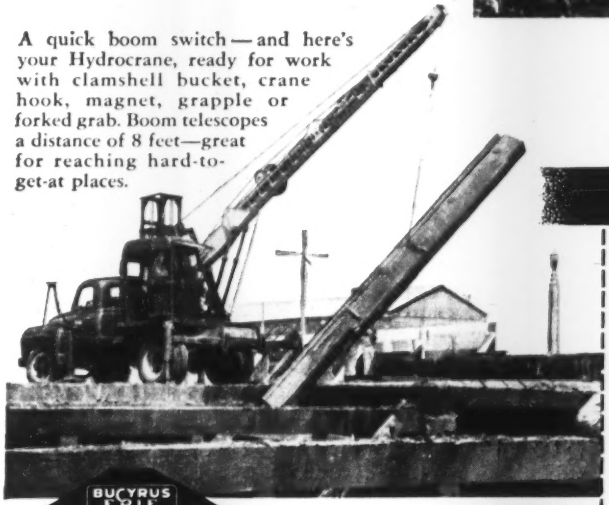
Look at these Hydrohoe Advantages

- **Telescoping boom eliminates up to 40 percent of time lost moving up.**
- **Precision control — every work function fully hydraulic.**
- **No bails, sheave blocks or drag ropes to interfere with loading.**
- **By telescoping boom, operator can peel off scallops at grade level — dig a smooth, level trench.**
- **Hydraulic ejector, built into dipper, assures fast, clean dipper dump — makes it practical to use a narrow, 12-inch wide dipper.**
- **Travels up to 50 mph on open highway.**



Double Action! The Bucyrus-Erie Hydrohoe gives you two separate digging actions: the first is the conventional dragshovel action of the dipper moving through its digging arc; the second, a separate horizontal stroke, obtained by telescoping the boom. Unit is available with both 18- and 12-in. wide bucket.

A quick boom switch — and here's your Hydrocrane, ready for work with clamshell bucket, crane hook, magnet, grapple or forked grab. Boom telescopes a distance of 8 feet—great for reaching hard-to-get-at places.



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OBITUARIES

C. Louis Meyer, 67, founder and chairman of the board of Ceco Steel Products Corp., died Oct. 5 in Lake Forest, Ill. He was graduated from the University of Nebraska in 1907 and received an engineering degree from Columbia University in 1909. He invented a system of reinforced concrete floor joist construction involving the use of removable steelforms on a rental basis. In 1912 he founded the Concrete Engineering Co. in Omaha to promote his invention. With the addition of other metal building products, the firm later changed its name to Ceco Steel Products Corp. with general offices in Chicago and plants and warehouses coast to coast.

Leander L. Benedict, 68, a civil engineer with the G. Morton Wolfe, architectural engineering firm in Buffalo, N. Y., died Sept. 28. He was a civil engineer with the Lehigh Valley Railroad, and later worked in the Erie County engineer's office.

John Albert Bader, 87, Wilmington, Del., builder and exponent of slum clearance, died Sept. 28. He was president of J. A. Bader and Co. from 1910 until the time of his death. His firm constructed many public buildings, schools and viaducts in Wilmington and throughout Delaware.

Everett H. Brown, 56, Deputy Chief of Construction Division, New England Division, Corps of Engineers, died Sept. 29. He had worked for the corps since 1936 when he joined the Providence District on flood control construction. He was active in the military construction program in World War II. In 1946 he was transferred to the New England Division in Boston, Mass., where he had since been engaged on flood control and military construction.

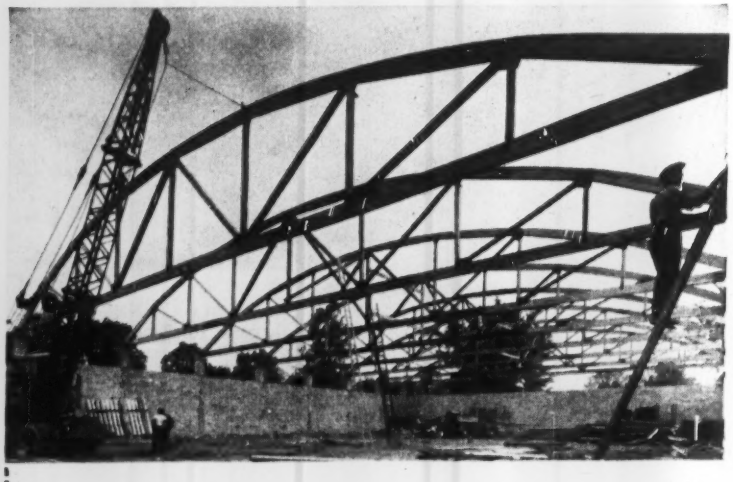
Charles Stephen Carden, 54, chief engineer for the engineering and construction division of Koppers Co., Inc., died Sept. 1 in Pittsburgh, Pa. He joined Koppers in 1925 as a draftsman, and was promoted to chief engineer last March.

Lucien W. Mueller, 58, board chairman of the Mueller Co., manufacturer of water and gas service and distribution supplies, died at Decatur, Ill., Oct. 6. He was a 1917 engineering graduate of Cornell University, and after Army service in World War I he joined the Mueller company founded by his grandfather.

Emery S. Hetrick, 70, vice-president of Jennings-Lawrence Co., engineers, died at Columbus, Ohio, Oct. 4. He was the first engineering graduate of the Tri-State College of Engineering, Angola, Ind., in 1902. He began in railroad construction in Kansas.

Floyd H. Compton, 58, chief engineer for the Penn-Dixie Cement Corporation at Philadelphia, died Sept. 23 at Norristown, Pa. He had been associated at various times with the Vulcanite Portland Cement Co., Portland Cement Association of Chicago, Allentown Portland Cement Co., and the Valley Forge Cement Co. He was graduated from Lafayette in 1916.

William O. Henry, 84, engineer, died in Cleveland, Ohio, Oct. 4. For nearly 30 years before retirement in 1939, he had been a construction engineer for the Willard Storage Battery Co.



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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. O. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Marinucci Bros. & Co., Inc., 51 Ceylon St., Dorchester, Mass. LB $166,569, est. $155,000. hy. and bridge reconstr. Main St., Harwich. Bids Oct. 6. CD 9/22.

CONNECTICUT—State Hy. Comr., State Office Bldg., Hartford,
The Jarvis Constr. Co., Inc., 5 Dover Rd., Manchester, Conn. LB $433,629, est. $400,000. bridge and bit. macad. approaches, F. A. Secondary Proj. S 64 (1), Farmington.
C. W. Blakeslee & Sons, Inc., 58 Waverly St., New Haven, Conn. LB $92,740, est. $90,000. 2 span composite beam bridge over Pawtucket River on Stillman Ave. to Westerly, R. I., Stonington. Bids Oct. 5. CD 9/18.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Platt Constr. Co., Inc., 99 First St., Cambridge, Mass. LB. $1,907,000. HOSPITAL addns., alterations, Nichols St., FITCHBURG, MASS. City, Bd. Trustees Burbank Hospital, City Hall, Fitchburg, Mass. Bids Oct. 7. CD 10/1.

Nanni Building Co., Valleyview Dr., Johnston, R. I., LB $488,000. Contr. No. 1, RANGER HALL, University of Rhode Island, KINGSTON, R. I. State, F. A. Adams, purch. agent, State House, Providence, R. I. Bids Oct. 6. CD 9/22.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

N. J., Port Newark—BOILER REPAIRS—B.A. 10/29—At office Director Purchase, The Port of New York Auth., 111 8th Ave., New York, 11, N. Y., repairing boiler in Powerhouse Building No. 9, Port Newark Naval Industrial Reserve Shipyard, Contract O & M 209, Proposal 251; adv. ENR 10/22.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Fred Alexander, Atlas, Pa. CA $222,624. general contract Valley Forge U. S. 422 and U. S. 309 interchanges;
B. D. & W. Inc., Crantville, R.D. 1, Pa. CA $229,500. general contract U. S. 611, U. S. 1 and U. S. 13 Interchanges, constr. utility bldg. and toll plazas on Delaware Extension of Pennsylvania Turnpike, Montgomery and Bucks Counties, PENNSYLVANIA. Pennsylvania Turnpike Comn., 11 N. Fourth St., Harrisburg, Pa. Bids Sept. 15. CD 8/27.
▲† Francis A. Canuso & Sons, 173 W. Roosevelt Blvd., Phila., Pa., CA $3,094,876, reconstr. Dry Dock No. 1, Naval Shipyard, Spec. 36304, PHILA., PA. Officer in Charge of Constr., Bureau Yards & Docks Contract, 4th Naval Dist., U. S. Naval Base, Phila., Pa. CD. 4/22, under LB.
▲† Morrissey Constr. Co., Inc., Chalfont, Pa., CA $2,184,145, const. airfield pavements and utilities, Naval Air Station, Spec. 34378, WILLOW GROVE, PA. Dpt. Navy, Fourth Naval Dist., P. Wks. Dpt., Naval Base Station, Phila. 12, Pa. Bids Feb. 26. CD 3-11, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Carcaise Constr. Co., 481 Virginia Ave., Rochester, Pa., CA $300,000. 1 story, 158x251 ft., brick, tile Consolidated Grade SCHOOL, Tuscarawas Rd., Brighton Twp., near BEAVER, PA. Beaver Area Joint School Dist., Beaver, Pa. Joseph F. Bontempo, Baker Bldg., Rochester, Pa., archt.
▲ H. K. Ferguson, 1783 E. 11 St., Cleveland, O., and Morrison-Knudsen Co., 319 Broadway, Boise, Idaho, CA $4,000,000, underground PARKING GARAGE, with park above "Mellon Square Park", Smithfield St., 6th and Oliver Ave., Wm. Penn Pl., PITTSBURGH, PA. Pittsburgh Parking Auth., City County Bldg., Pittsburgh, Pa. Mitchell & Rickey, 524 4th Ave., Pittsburgh, Pa., and H. K. Ferguson Co., 1783 E. 12 St., Cleveland, O., archts.-engrs. CD 6/10/52.
▲ George H. Chilli, 805 Ann St., Homestead, Pa., CA Approx. $1,000,000. 3 story, bsmnt., 40x295 ft., brick, tile, steel mens DORMITORY, PITTSBURGH, PA. Carnegie Institute of Technology, Schenley Park, Pittsburgh, Pa. CD 12/30.
Ceasar De Chicchis & Co., Box 239, Clairton, Pa., CA Approx. $414,439, 1 story, part bsmnt., 170x250 ft., U-shaped, brick, block Junior-Senior HIGH SCHOOL, SALISBURY, PA. Joint School Auth. of Salisbury, Salisbury, Pa. Bids Sept. 3. CD 8-26.

SOUTH

BIDS ASKED—BUILDINGS

▲ Ga., Savannah—PLANT—B.A. 11/6—American Cynamid Co., 30 Rockefeller Plaza, New York, N. Y. (selected list of bidders), plant. Total $14,000,000. Robert & Co. Assocs., 96 Poplar St. N.W., Atlanta, Ga., archts. Extended date. CD 9/1.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† Virginia Eng. Co., Inc., 29th St. at James River, Newport News, Va., CA $1,111,000, exten. turbo-jet engine overhaul bldg., Naval Air Station, NOY 73602, Spec. 24676, NORFOLK, VA. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Va. Bids Oct. 6. CD 10/12, under LB.
▲ WEST VIRGINIA—West Virginia Turnpike Comn., 1340 Wilson St., Charleston, Zone 5,
J. B. Michael & Co., Inc., P.O. Box 5895, Crosstown Station, Memphis, Tenn., CA $4,386,691, Contract 29, concrete paving, incl. c. conc. curbs, gutters, toll plaza, etc., Mile 0 to 20, Mercer and Raleigh Counties. Bids Oct. 6. CD 10/8, under LB;
Nello L. Teer Co., P.O. Box 1131, Durham, N. C., CA $6,947,128, Contract 30, rigid concrete paving, approx. 30 mi. incl. curbs, gutters, toll plaza and misc. items to complete the proj. between Ghent, Mile 20 and Mossy Mile 50, Raleigh and Fayette Counties, Bids Sept. 15. CD 9/17;
Bero Engineering & Constr. Co., P.O. Box 477, Hampton, Va., CA, $3,418,323, Contract 31, concrete paving, misc. constr. 16 mi. Turnpike Mile 51.6 to 67.6 Fayette and Kanwaha Counties, Bids Sept. 29, CD 10/1, under LB;
R. B. Tyler Co., 1446 Levering St., and Bresslin Constr. Co., 1433 S. Preston St., both Louisville, Ky., CA, $4,753,569 Contract 32, concrete paving, misc. constr. 19.7 mi. Turnpike between Mile 68.3 (Station 1463 plus 14) at Standard Tunnel near Town of Standard and Mile 88.0 (Station 89 plus 12) Ramp F-Charleston, incl. Chelvan, Kanawha City and Charleston Interchanges, Kanawha Co. Grand total $19,505,711. Bids Sept. 22. CD 9/24, under LB.
▲† T. F. Scholes, Inc., 632 Washington St., Reading, Pa., CA $3,184,389. site railroad, Sunny Point Ammunition Depot, ENG-31-075-2, WILMINGTON, N. C. U. S. Eng., 308 Customhouse, Wilmington, N. C. Bids Sept. 24. CD 9/1.
▲† J. A. Jones Constr. Co., 209 W. 4 St., Charlotte, N. C., LB, $2,019,598, intake structure and sluice outlet works, Buford Dam, Chattahoochee River, Buford, Inv. 54-9, GEORGIA. U. S. Eng., P.O. Box 1169, Mobile, 7, Ala.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects invloved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Shelby Constr. Co., 1106 Canal St., New Orleans, La. LB $4,888,000. 2 story, masonry 628 HOUSING units, Proj. VA-6-2 and VA-6-3, NORFOLK, VA. Norfolk Redevelopment & Housing Auth., Kresge Bldg., Norfolk, Va. Bids Oct. 7. CD 9/3.
▲ Baker & Coombs, Inc., 601 E. Brockway St., Morgantown, W. Va., CA $1,367,700, est. $1,050,000. 3 story bsmnt., 166x300 ft., brick, concrete, steel HOSPITAL, KINGWOOD, W. VA. County Hospital Bd. of Preston Co., Kingwood, W. Va. L. D. Schmidt & Sons, Professional Bldg., Fairmont, W. Va., archts. Bids Sept. 29.
Strong & Harmon, 2714 Cooleeme Dr., Raleigh, N. C., CA $864,243, 113,800 sq. ft. Junior High SCHOOL, RALEIGH, N. C. Raleigh City Administration Unit, Court House, Raleigh, N. C. Bids Sept. 15. CD 9/22, under LB.
▲ E. A. Scott & Sons, Americus, Ga., LB, $1,384,639, HIGH SCHOOL and ELEMENTARY SCHOOL, WAYNESBORO, GA. Burke Co. Bd. Educ., Waynesboro, Ga. Bids Oct. 8. CD 9/22.
▲ Geo. D. Auchter Co., foot of E. 56 St., Jacksonville, Fla., CA, $1,196,873, 100x106 ft. Southside Generating PLANT addn., JACKSONVILLE, FLA. City, City Hall, Jacksonville, Fla. Bids Oct. 1, awarded Oct. 9. CD 10/9, under LB.
▲ Lionel F. Favret Co., Inc., 937 Gravier St., New Orleans, La. LB $2,534,167. high SCHOOL, Phoenix, grade SCHOOLS at Scotville and Sunrise, POINTE A LA HACHE, LA. Plaquemines Parish School Bd., Pointe-la-Hache, La. Bids Oct. 6. CD 8/19.
▲ Huber Hunt & Nichols, Inc., Speedway, Indianapolis, Ind. CA est. $1,000,000. superstructure Louisville Assembly PLANT No. 2, LOUISVILLE, KY. Ford Motor Co., 3000 Schaefer St., Dearborn, Mich. Bids Sept. 25, awarded Oct. 2. CD 10/8, under LB.
▲ † Tennessee—Tennessee Valley Auth., New Sprankle Bldg., Knoxville, awarded contracts for Widows Creek Steam Plant, Ala., John Sevier Steam Plant, Tenn., Gallatin Steam Plant, Shawnee Steam Plant, Tenn., Colbert Steam Plant, Ala., and Miscellaneous. Grand total $1,668,135.

WIDOWS CREEK STEAM PLANT, ALA.

Southern Fireproofing Co., Federal Reserve Bank Bldg., Cincinnati, O., CA $73,949, masonry installation;

JOHN SEVIER STEAM PLANT, TENN.

Westinghouse Electric Corp., Union Bank Bldg., Pittsburgh, Pa., CA $719,711, power switchboards;

MISCELLANEOUS

Reynolds Metals Co., Listerhill, Ala., CA $121,842, conductor cable;
Pennsylvania Transformer Co., Canonsburg, Pa., CA $277,684, transformers;
Westinghouse Electric Corp., Union Bank Bldg., Pittsburgh, Pa., CA $124,493, capacitor equipment;

GALLATIN STEAM PLANT, TENN.

Henry Pratt Co., 2222 S. Halsted St., Chicago, Ill. CA $84,786, valves for condenser circulating water sys.;
American Creosote Works, Inc., Jackson, Tenn., CA $91,000, cross and switch ties;

SHAWNEE STEAM PLANT, TENN.

Babcock & Wilcox Co., Sterling Ave., Barberton, O., CA $105,479, steam generating units, supplement to original contract;

COLBERT STEAM PLANT, ALA.

Babcock & Wilcox Co., Sterling Ave., Barberton, O. CA $69,191, steam generating units, supplement to original contract.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

▲ OHIO—B.A. 11/10—Ohio Turnpike Comn., 139 E. Gay St., Columbus,
Wood Co.—Sect. 44, four single bridges, four twin bridges, 6 rein.-con. box culverts for drainage incl. grading, drainage, structures, paving approx. 4.6 mi. beginning at point about 3,000 ft. west of Oregon Rd., exten. eastwardly to point about 2,000 ft. east of Lemoyne Rd.
Sect. 45, three single bridges, seven twin bridges, three rein.-con. box culverts for drainage incl. grading, drainage structures, paving approx. 3.5 mi. beginning at point about 768 ft. east of Lucas-Wood Co. line, exten. eastwardly to point about 3,000 ft. west of Oregon Rd.
Wood and Ottawa Counties—Sect. 43, four single bridges, four twin bridges, seven rein.-con. box culverts for drainage, all bridges are steel beam from 3 to 5 spans each, incl. grading, drainage, structures, paving approx. 4.2 mi. beginning at point about 2,000 ft. east of Lemoyne Rd. in Wood Co., exten. eastwardly to point about 1,000 ft. east of Billman Rd., in Ottawa Co. CD 1/15, under Streets and Roads.

BIDS ASKED—BUILDINGS

▲ Ill., Wheaton—SCHOOL—B.A. 10/29—School District 95, 504 Naperville Rd., 2 story, concrete, steel, community high school $2,200,000. Perkins & Will, 309 Jackson Blvd., Chicago 6, Ill., archts. CD 10/22.

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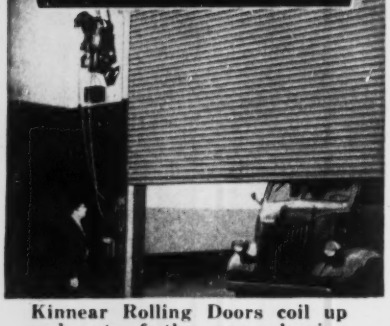

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SOON LETS CONTRACT—BUILDINGS

▲ Ill., Chicago—APARTMENTS, etc.—Illinois Institute of Technology, 35 W. 33 St., Zone 16, soon lets contract two 9 story apartments for students and staff, 31 St., Michigan and Wabash Aves. $1,500,000. Ludwig Mies Van der Rohe, c/o owner, archit. CD 7/28.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

OHIO—State Hy. Dpt., Columbus, Zone 15, rejected bids Sept. 25, wid'n., c.c. conc. paving, continuous concrete slab bridge with concrete substructure spans, two at 17 ft. 130 ft. on centerline of pier, Bridge No. SC 23-111 over Thomas Run, 0.965 mi., Valley Twp. Type T-35 H-20 and structure, U.S. R. 23, Sects. (10.17-10.76), AA-11 (7), Scioto Co., LB $344,845, est. $281,450. CD 10/2, under LB.

▲ OHIO—State Hy. Dpt., Columbus, Zone 15, Visintine & Co., 1315 Edgehill Rd., Columbus, O. CA $2,140,000, est. $2,493,850. c. conc. paving, continuous steel girder bridge with concrete deck and concrete substructure, spans 102 ft., three at 127 ft., 102 ft., roadway 56 ft. with 3 ft. sidewalks, Bridge No. RO-23-99 over Paint Creek, two at 24 ft., roadway 2.171 mi. Scioto Twp., Type T-71 and structure, Part No. 1; c. conc. paving, continuous steel beam bridge with concrete deck and concrete substructure spans 60 ft., 86 ft., 86 ft., 60 ft. roadway 56 ft. incl. 3 ft. median and with 1 ft. safety curbs, Bridge No. RO-23-113 over Baltimore & Ohio R.R. 1.433 mi., Type T-71 and structure, City of Chillicothe, Part II, U.S. R. 23, Sects. 9.16, 11.02, AA-11 (8), AA-AU-11 (9) Parts 1 and II, Ross Co. CD 10/2, under LB.

Murdock Const. Co., 1686 West St., Norwood, O. LB $396,508, est. $464,500, install 8- to 48-in. sewers, necessary drains, inlets, laying 8- to 16-in. water mains for Langdon Farm Rd. from Montgomery Park to Wiehe Rd., CINCINNATI, O. City, City Hall, Cincinnati, O. Bids Oct. 6. CD 11/7.

▲† Geo. Sheaf & Co., 449 Neilston St., Columbus, O. CA $5,543,565. 5 story, rein.-con., brick hospital Wright-Patterson Air Force Base, DAYTON, O. U. S. Eng., 830 W. Broadway, Louisville 3, Ky. CD 9/28, under LB.

Kenny Constr. Co., 320 Oakton St., Evanston, Ill., LB, $248,000, bridge over North Channel, Evanston;

Arcole Midwest Corp., 3225 Main St., Evanston, Ill., LB, $197,770, grade separation Congress Expressway over Lake St., Bellwood, CHICAGO, ILL., Cook Co., County Bldg., Chicago, Ill. Bids Oct. 6. CD 9/28.

▲ Orr Constr. Co., 27 19 Place, Chicago Heights, Ill., LB, $1,179,900, Congress Street Expressway, Mannheim Rd. to Addison Creek, Hillside;

Charles J. Wilson, 7601 S. Wentworth St., Chicago, Ill., LB, $304,422, Congress St. Expressway, Pulaski Rd. to Central Park Ave. excavating, Chicago;

Palumbo Excavating Co., 2738 W. Harrison St., Chicago, Ill., LB, $410,141, Congress St. Expressway construction, Central Park Ave. to Kedzie St. excavating, CHICAGO, ILL., Cook Co., County Bldg., Chicago, ILL., Cook Co., County Bldg., Chicago, Ill. Bids Oct. 6. CD 9/29.

▲ Michael Pontarelli, 4248 N. Kilpatrick St., Chicago, Ill., LB, $1,342,615, Roscoe St. Sewers, CHICAGO, ILL., City, City Hall, Chicago, Ill. Bids Sept. 25. CD 9/16.

Contracting & Material Co., 1235 Dodge St., Evanston, Ill., CA $202,851, b. conc. surf., Montrose Ave., Kedzie to Milwaukee St.;

Union Contg. & Eng. Co., 30 N. LaSalle St., Chicago 2, Ill., CA $78,856, b. conc. resurf. Wabash Ave. from Garfield Blvd. to 51st. St.; CA $906,333, b. conc. resurf. Wells St. from Taylor St. to W. Wacker Dr.; CA $106,860, b. conc. paving E. 79 St. from S. Stony Island to Brandon Aves., CHICAGO, ILL., City, City Hall, Chicago, Ill. Grand total $1,294,900. Awarded Oct. 5. CD 4/25/45.

Union Contg. & Eng. Co., 30 N. LaSalle St., Chicago 2, Ill., LB $142,200, resurf., wid'n. Wabash Ave. from E. 63 St. to E. Garfield Blvd.;

Allied Asphalt Paving Co., 13912 S. Halsted St., Chicago, Ill., LB $199,723, resurf., S. Indiana Ave. from 35 to 63 Sts.;

Leininger Constr. Co., 30 N. LaSalle St., Chicago 2, Ill., LB $229,812, resurf., wid'n. N. Laramie Ave. from Augusta Blvd. to Fullerton Ave., CHICAGO, ILL., City, City Hall, Chicago, Ill. Bids Oct. 5. CD 9/28.

BUILDINGS

LOW BIDS AND CONTRACTS

H. C. Hummer Co., 44 W. Royal Forest Blvd., Columbus 14, O. LB $445,385, girls' DORMITORY at Ohio University, ATHENS, O. P. P. Wks., 705 Ohio Dpts. Bldg., Columbus, O. Bids Oct. 2. CD 9/16.

Sever-Williams Co., Washington C. H., O. CA $332,900, general and electrical contracts Beatty Park SCHOOL, COLUMBUS, O. Columbus Bd. Educ., 270 E. State St., Columbus, O. CD 4/2/52.

H. C. Huber Constr. Co., 631 E. Stroop Rd., Dayton, O. Own Forces, $354,000, group of RESIDENCES, Lesher Dr., Darwin Ct. and David Rd., DAYTON, O.

▲ Edward J. DeBartolo, 2630 Market St., Youngstown, O. Owner Builds, $2,500,000 L-shaped, red brick SHOPPING CENTER, Aurora Rd., 600 ft. west of SOM Center Rd., paved parking for 1,200 cars, SOLON, O.

Prosser & Howells, 5031 Broadway, Gary, Ind., CA $308,900. 2 story, bsmnt. HIGH SCHOOL, GRIFFITH, IND. Griffith School Bldg. Corp., Franklin School Bldg., Griffith, Ind. Awarded Oct. 4. CD 1/27.

Julius Roman, 3939 W. 59 St., Chicago, Ill. Owner Builds. $300,000. 25 HOMES, South Side CHICAGO, ILL. Nordlie & Co., 11106 S. Michigan St., Chicago 28, Ill., archts.

▲ Sumner S. Sollitt Constr. Co., 307 Michigan Ave., Chicago, Ill., LB, $4,543,000, five 471-unit APART-

MENTS, 2nd phase of Harold L. Ickes Homes, 22 and State St., CHICAGO, ILL. Chicago Housing Auth., 608 S. Dearborn St., Chicago 5, Ill. Bids Oct. 6. CD 9/9.

Coronet Constr. Co., 8836 Brookfield Ave., Brookfield, Ill. Owner Builds. $400,000. 34 HOMES, Sunset Ave. and 60th St., south of LAGRANGE, ILL. Oliver Sandquist, 49 E. Oak St., Chicago 11, Ill., archt.

▲ Chas. Jacobs, c/o Milton Staben, engr., 222 Market St., Waukegan, Ill. Owner Builds, $1,000,000. 70 HOMES along Greenwood and Lewis Aves., WAUKEGAN, ILL.

▲ Gerard Putters & Co., 24614 Ford Rd., Dearborn, Mich. Owner Builds. $1,125,000. 100 single face brick HOUSES, West Chicago, Nathaline and Columbia Sts., DEARBORN, MICH.

▲ Park Building Co., 3115 David Stott Bldg., Detroit, Mich. Owner Builds. $1,250,000. 112 single HOUSES Newburgh Lake and near Middle Rouge Parkway, on 30 acres, LIVONIA, MICH.

WEST OF MISSISSIPPI

BIDS ASKED—BUILDINGS

▲ Colo., Lakewood—SCHOOLS—B.A. 11/3—Jefferson County School District No. R-1, 1580 Yarrow St., 1 story, brick grade school, $668,520; 1 story, brick grade school, Wheat Ridge, $518,520. John K. Monroe, 400 Security Life Bldg., Denver, engr. and archt. CD 9/21.

▲ Tex., Beaumont—HOUSING—B.A. 11/4—Beaumont Housing Auth., Hotel Beaumont, 150 two story wood, brick housing units in 26 separate bldgs. $1,125,000. Stone & Pitts, 1872 Calder Ave., engrs.-archts. CD 11/10.

Kan., Lawrence—DORMITORY—B.A. 11/10—State, Bd. Regents, Topeka, dormitory at University of Kansas. $715,000. J. A. Brown, State House, Topeka, state archt. CD 7/27.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ OKLAHOMA—State Hy. Dpt., Capitol, Oklahoma City, Gregg Constr. Co., Henryetta, Okla., CA, $1,451,559, est. $1,505,378, superstructure of 3,750 S. Canadian River Bridge, at Norman, Cleveland Co. Bids Oct. 6, awarded Oct. 9. CD 10/12, under LB.

OKLAHOMA—State Hy. Dpt., Capitol, Oklahoma City, W. E. Logan & Sons, Barnes Bldg., Muskogee, Okla. CA $70,295, est. $77,117. grade separation on U. S. 66 at Memorial Rd., Oklahoma Co.;

Gragg Constr. Co., Henryetta, Okla. CA $159,821, est. $177,078. 5 concrete bridges on Hy. 8 at Okeene, Blaine Co.; CA $75,435, est. $83,880, 5 concrete and steel bridges on new route from Hominy to Fairfax, Osage Co.;

Acme Constr. Co., 515 N. Kentucky St., Oklahoma City 3, Okla. CA $220,429, est. $237,324. grade separation on U. S. 66 at U. S. 77 intersection, Oklahoma Co. Grand total $525,980. Bids Oct. 6, awarded Oct. 7. CD 9/28.

▲ OKLAHOMA—State Hy. Dpt., Capitol, Oklahoma City, W. E. Steelman, 2800 N.E. Fourth St., Oklahoma City 4, Okla. CA $76,641, est. $82,240. bit. surf., culverts 1.975 mi. for detour road on U. S. 66 near Edmond, Oklahoma Co.;

W. E. Logan & Sons, Barnes Bldg., Muskogee, Okla. CA $273,902, est. $343,591, roadbed 3.928 mi. for 4-lane on No. 66 at Witcher, Oklahoma Co.; CA $166,574, est. $193,527, grading, drainage 8 mi. State Hy. 20 between Hominy and Fairfax, Osage Co.; CA $73,674, est. $91,419, grading, drainage 3.23 mi. on State Hy. 20 between Hominy and Fairfax, Osage Co.;

D. W. Falls Co., Admiral Blvd., Tulsa, Okla. CA $149,768, est. $194,264. grading, drainage 8 mi. State Hy. 20 between Hominy and Fairfax, Osage Co.;

Boecking Constr. Co., 2810 N. McArthur St., Oklahoma City 7, Okla. CA $233,953, est. $233,601. c. conc. 1.23 mi. U. S. 66 on Fourth St. in Sayre, Beckham Co.;

Smith Bros., Noble, Okla. CA $86,536, est. $103,584. grade, drainage 7.387 mi. Hy. 31 between Quinton and Featherston, Pittsburg Co.;

Palleson Constr. Co., 2808 N.W. 18 St., Oklahoma City 6, Okla. CA $91,941, est. $114,548. roadbed on 7.32 mi. Hy. 8 at Okeene, Blaine Co. Grand total $1,152,989. Bids Oct. 6, awarded Oct. 7.

▲† Mississippi Valley Eng. & Constr. Co., 787 S. Willett St., Memphis, Tenn., CA, $1,032,633. est. $1,200,000. bank protection and channel work, Muldrow, Sequoyah Co., Eng-34-066-54-5, OKLAHOMA, U. S. Eng., P.O. Box 61, Tulsa, Okla. Bids Aug. 27, awarded Sept. 28. CD 9/9, under LB.

COLORADO—State Hy. Dpt., State Office Bldg., Denver, Schmidt Constr. Co., Grand Junction, Colo., LB, $729,403, plant mix surf. 10.441 mi. State Hy. No. 4, F 001-1 (9), Garfield Co. Bids Oct. 6.

BUILDINGS

LOW BIDS AND CONTRACTS

Harold Rolufs, Guthrie, Okla. CA Est. $350,000. 27 unit MOTEL and CAFE at Broad and Oklahoma Sts., GUTHRIE, OKLA. Wm. Pugh, Guthrie, Okla. J. E. Bignell, Guthrie, Okla., archt. Awarded Oct. 1.

W. N. Holway, Inc., Pryor, Okla. Owner Builds. $600,000. 60 HOUSING units, PRYOR, OKLA.

▲ J. W. Bateson Constr. Co., Inc., 420 Gibralta Life Bldg., Dallas, Tex., CA, $1,515,685, general contract, electrical work and plumbing for CRIMINAL COURTS and JAIL, DALLAS, TEX. Dallas Co., c/o Comrs. Court, Court House, Dallas, Tex. Bids Sept. 24, awarded Oct. 7. CD 9/29, under LB.

▲ Robert E. McKee, Inc., General Contractor, 1918 Texas St., El Paso, Tex., CA $1,810,700, State

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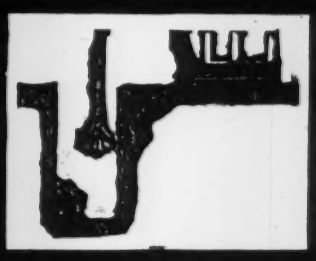

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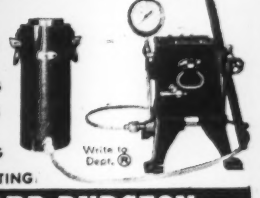

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HOSPITAL BLDGS., facilities, LAS VEGAS, N. M. State of New Mexico, c/o State Purch. Agent, Santa Fe, N. M. Bids Sept. 17.

FAR WEST

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Fred J. Early Jr. Co., Inc.**, 22138 S. Vermont St., Torrance, Calif., LB, $619,171, Item I; $434,822, Item II apron fueling, Naval Air Station, NOY 76831, Spec. 37482, MIRAMAR, CALIF. Eleventh Naval Dist., San Diego, Calif. Bids Oct. 1. CD 9/4.

Chester & Sullivan, Grandview, Wash., CA, $500,000. 20,000 sq. ft. food STORE and parking lot with space for 250 cars, PASCO, WASH. Basil Maib, Grandview, Wash.

Home Investment Co., 4439 Atlantic Ave., Long Beach, Calif. Owner Builds, $490,800, 86 stucco DWELLINGS, Barrios, Albury, Deborah and Oakbrook Sts., LAKEWOOD, CALIF. Poper & Lockett, Farmers & Merchants Bldg., Long Beach, Calif., archts.

Devon Constr. Co., 739 N. Highland Ave., Los Angeles, Calif., CA, $996,300, 92 stucco DWELLINGS, Chadsey, Close, Cornishcrest and Kane Sts., WHITTIER, CALIF. Parkwood Crest, 739 N. Highland Ave., Los Angeles, Calif. David Freedman, Commercial Center Bldg., Beverly Hills, archt.

CANADA

BIDS ASKED—BUILDINGS

Ont., **Brockville**—SCHOOL—B.A. 10/27—Bd. Educ., C. W. Seace, P. O. Box 126, school in North Ward, $450,000. Drever & Smith, 81 Brock St., Kingston, archts. CD 1/26.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Grant Contg. Co. Ltd., 26 Queen St. E., Toronto, Ont., CA, $579,600, water mains in Queen St. East, TORONTO, ONT. City, City Hall, Toronto, Ont. CD 9/10, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **B. Perini & Sons Ltd. (Canada)**, 44 Jackes Ave., Toronto, Ont., CA, $2,566,450, H-shaped, sides 53x200 ft., brick, stone FOOD and DRUG LABORATORY, at Tunney's Pastiire for Dpt. Health & Welfare, OTTAWA, ONT. Dpt. P. Wks., Hunter Bldg. Ottawa, Ont. Bids Sept. 2, awarded Sept. 10. CD 9/10, under LB.

▲ **Eastern Constr. Co.**, 2573 Airport Rd., Windsor, Ont., CA, $1,000,000, 10,000 sq. ft., FOUNDRY, incl. core room addn., cleaning and shipping bldg., SARNIA, ONT. Holmes Foundry Co. Ltd., 200 Exmouth St. Sarnia, Ont. Bids Sept. 28, awarded Oct. 5. CD 9/21.

J. H. Ross Constr. Co., 79 Huntley St., Toronto, Ont., CA, $450,000, 8 story E-shaped, 104 suite, 100x200 ft., steel, brick, concrete APARTMENT, concrete fdn., Mt. Royal Ave. and Regal Rd., TORONTO, ONT. Regal Apartments Ltd., c/o contractor. Crang & Boake, 79 Huntley St., Toronto, Ont., engrs.

ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Lease & Leighland**, 1501 N. 35 St., Seattle 3, Wash., and **M-B Contg. Co.**, Lloyd Bldg., Seattle 1, Wash. CA $2,796,073, road and street paving, storm drainage work, outside utilities, POL laboratory, guardhouse, package petroleum storage, ammunition shop, ammunition booster station, Inv. 54-14, FORT RICHARDSON, ALASKA. U. S. Eng., Anchorage, Alaska. Bids Sept. 25. CD 9/30, under LB.

Proposed Projects——

WATER SUPPLY

▲ **Nev., Las Vegas**—Las Vegas Water Dist., Las Vegas, voted $8,700,000 bonds Sept. 30, constr. water pipe line to bring Lake Mead water into the area. James M. Montgomery, 15 N. Oakland Ave., Pasadena, Calif., consult. engr. CD 9/1.

SEWERS, WASTE DISPOSAL

▲ **Mo., Overland (St. Louis 14, P.O.)**—City, Tom Jordan, mayor; City Hall, 9119 Lackland Rd., $1,744,000 bond election Nov. 3, storm sewers. CD 7/5/50.

▲ **Pa., Palmyra**—Boro, sanitary sewers and sewage treatment plant. $1,500,000. Glace & Glace, 1001 N. Front St., Harrisburg, consult. engrs.

BRIDGES

▲ **Man., Winnipeg**—Municipality, City Hall, ratepayers to vote Oct. 28, bridge construction. $1,100,000. W. D. Hurst, City Hall, city engr. CD 4/30/43.

STREETS AND ROADS

▲ **O., Youngstown**—City, City Hall, bond election Nov. 3, street imprvt. program. $4,000,000. CD 6/12.

EARTHWORK, WATERWAYS

▲† **Idaho**—Bureau Reclamation, Dpt. Interior, Palisades, clearing part of Palisades Reservoir on south fork of Snake River, approx. 70 mi., from Idaho Falls, Schedules 1, 2, 3, 4 and 5 included. Prospective bidders are invited to inspect the areas in the immediate future in order that they may be informed and in a position to submit a bid when the work is advertised. CD 9/12/44.

AIRPORTS

▲† **Me., Brunswick**—AIRPORT FACILITIES—Dist. P. Wks. Office, 495 Summer St., Boston, Mass., plans by W. Chester Browne & Assoc., 184 Boylston St., Boston, Mass., parking facilities, $2,840,000; radio communication bldg., facilities, $1,187,000; ordnance facilities, $2,000,000; hangar, $2,400,000; utilities, $300,000, Naval Air Station. CD 10/30/51.

▲ **Tex., Dallas**—AIRPORT—City, City Hall, Main and Harwood Sts., runway exten., paving, $1,275,000; admin. bldg. and tower, $575,000; runway lighting, $75,000; adequate protective field fencing, $75,000, for Redbird Airport. Forrest & Cotton, 803 Praetorian Bldg., consult. engrs. CD 1/8.

▲ **Tex., Dallas**—AIRPORT—City, City Hall, Main and Harwood Sts. (a) airport terminal, $2,000,000 (b) instrument runway $1,500,000 (c) hangars, $750,000 (d) shops, and misc. const. of bldgs., $5,725,000 (e) fueling sys. $175,000 (f) underground utilities, water, gas, electric cable, sewers, $250,000 (g) drainage, $200,000 (h) warehousing, storage, $400,000 for Love Field. Forrest & Cotton, 803 Praetorian Bldg., consult. engrs. CD 1/30.

LATIN AMERICA

▲ **Mexico, Anton Lizardo**—Petroleos Mexicanos, Juarez, 104, Mexico City, plans 25,000 bbl. oil refinery, $5,000,000.

▲ **Mexico, Chacahua**—Sria de la Marina (Navy Dpt.), Mexico City, plans sea port. $6,000,000.

▲ **Mexico, Huasteca Potosina**—Gonzalo N. Santos, domicilio concocido, San Luis Potosi City, plans sugar mill. $12,000,000.

▲ **Mexico, Tampico**—Petroleos Mexicanos, Juarez, 104, Mexico City, plans two shipyards, dry dock, five ship repair shops, $57,800,000.

▲ **Mexico, Villahermosa**—Banco de Credito Hipotecario, Palma Norte, 308, Mexico City, plans factory zone, home colony. $2,310,000.

PUBLIC BUILDINGS

▲ **Ala., Birmingham**—SCHOOL IMPRVS.—City, City Hall, bond election Dec. 15, school imprvs. $10,500,000.

▲ **Calif., San Bernardino**—SCHOOLS—San Bernardino City School District, $2,750,000 bond election Nov. 24, two gymnasiums at Pacific and San Bernardino High Schools. CD 8/21/50.

▲ **Ga., Atlanta**—PARKING GARAGE—Fulton-DeKalb Hospital Auth., 236 Hunter St. S. W., auto parking garage for Grady Hospital. $1,000,000.

▲† **Ala., Childersburg**—AMMUNITION PLANT—Dpt. Army, Ordnance Dept., Pentagon Bldg., Wash., D. C., rehabilitate ammunition plant and facilities at Alabama Ordnance Depot. $46,000,000. Rust Eng. Co., Exchange Bldg., Birmingham, consult. engr.

▲† **Calif., San Francisco**—HOSPITAL—Veterans Admin., Vermont Ave. between H and I Sts. N.W., Wash., D. C. neuro-psychiatric hospital at Fort Funston, $7,312,000 appropriated. $25,689,000, incl. equipment. CD 11/11/46.

▲ **Idaho, Kellogg**—SCHOOLS—School District 391, Kellogg, plans by Perkins & Will, 309 W. Jackson Blvd., Chicago, Ill., high school, $1,000,000. (Correction—architects), CD 9/22; plans by Cutler & Gale Realty Bldg., Spokane, Wash., Junior High School, $500,000.

▲† **Kan., Topeka**—HOSPITAL—Veterans Admin., Munitions Bldg., Wash., D. C., veterans hospital, $6,193,000 funds authorized, $22,100,000 incl. equip.

▲ **Ill., Evergreen Park**—SCHOOL—School District 231, 9529 S. Fairfield Ave., plans by Chas W. Nichol, 23 E. Jackson Blvd., Chicago, Zone 4. 1 and 2 story high school, 99 and Kedzie Ave. $1,000,000.

▲ **Ga., Athens**—HOSPITAL—Comrs. Clarke Co., Athens, plans by Wilmer C. Heery, 128½ College Ave., Athens General Hospital addn. $1,500,000. CD 6/11.

▲ **Mich., Ann Arbor**—APARTMENTS—University of Michigan, W. K. Pierpont, vice pres. Bd. Regents, Ann Arbor, apartments for married students, North Campus, $1,000,000; Couzens Hall addns., alterations to house facilities for 540 women nursing students, $1,700,000.

▲ **Mo., Ferguson** (St. Louis 21 P. O.)—SCHOOL—Reorganized School Dist. R-2, St. Louis Co. Bd. Educ., Mildred C. Jeske, secy., 200 Church St., plans by Charles W. Lorenz, 700 N. Ballas Rd., Rte. 13, Box 1378, Kirkwood, Zone 22, elementary school, southside of dist., elementary school near U. S. 66 and Florissant Rd. and high school addn. $1,000,000. CD 5/11.

▲ **Mo., Webster Groves** (St. Louis 19 P.O.)—SCHOOL Bd. Educ., Leonard A. Steger, supt. Schools, 16 Selma Ave., $2,600,000 bond election Nov. 17, incl. Junior High School, $1,665,000. CD 12/13/44.

▲ **O., Kettering**—SCHOOL PROGRAM—Bd. Educ., Kettering Local School Dist., Kettering, $2,020,000 bond election Nov. 3, to build and equip. school building program.

▲ **O., Middletown**—SCHOOL—Bd. Educ., Lemon Twp. School Dist., Middletown, voted $1,500,000 bonds Sept. 22, grade school and room addns. to several present schools.

▲† **O., Parma**—HOSPITAL—Veterans Admin., Vermont Ave. between H and I Sts. N. W., Wash. 25, D. C., 1,000 bed neuro-psychiatric hospital, $23,000,352. CD 7/10/52.

▲ **O., Van Wert**—HOSPITAL, etc.—Comrs. Van Wert Co. Court House, $1,000,000 bond election Nov. 3, hospital and nurses' home. CD 11/11.

▲ **Pa., Pittsburgh**—SCHOOL—Bd. Educ., 341 S. Bellefield Ave., 1 and 2 story, brick grade school, St. Clair Village. $1,000,000.

▲ **Tex., Dallas**—HOSPITAL—City, City Hall, Main and Harwood Sts., and Dallas Co., Moore Lynne, co. aud., Court House, constr. City-County Memorial Hospital, $8,500,000; remodeling Parklind Hospital, $2,500,000; remodeling nurses home at Parkland Hospital, $500,000. CD 5/4/50.

▲ **Man., Winnipeg**—HOUSING—Municipality, City Hall, ratepayers to vote Oct. 28, housing development, $1,100,000. W. D. Hurst, City Hall, city engr. CD 3/17/49.

▲ **Man., Winnipeg**—SCHOOLS—Municipality, City Hall, ratepayers to vote Oct. 28, construction, $3,500,000. W. D. Hurst, City Hall, city engr. CD 6/25.

COMMERCIAL BUILDINGS

▲ **Calif., Balboa**—YACHT CENTER—Dr. Forbes Farm Corp., 530 W. 6 St., Los Angeles, plans by Welton Becket & Assoc., 5657 Wilshire Blvd., Los Angeles, yacht center on Lido Isle, incl. club house, docks, swimming pools, tennis courts. $5,000,000.

▲ **Calif., Covina**—DWELLINGS—Covina Homes, c/o Edward H. Fickett, archt., 5657 Wilshire Blvd., Los Angeles, 199 frame, stucco dwellings, $1,500,000.

▲ **Colo., Denver**—SEMINARY—Archdiocese of Denver, 1536 Logan St., plans by John K. Monroe, archt.-engr., 400 Security Life Bldg., 2 story, brick, St. Thomas Seminary addn. $1,000,000.

▲ **Ill., Chicago**—HOSPITAL—St. Bernards Hospital, 6337 Harvard St., plans by Jos. M. Bagnuoli, 696 W. North Ave., Zone 10, hospital addn. $1,000,000.

▲ **Ill., Northfield**—HOSPITAL—Dr. John A. Conley, 1113 Central St., Wilmette, plans by Mayo & Mayo, 35 E. Wacker Dr., Chicago, Zone 1, hospital, Waukegan Rd. near Winnetka Rd. $1,000,000.

▲ **N. Y., New York**—OFFICE—Weiler & Swig, 50 E. 42 St., Zone 17, plans by William Lescaze, 211 E. 48 St., Zone 17, 30 story office, 2 Broadway on site bounded by Broadway, Stone, Beaver, New, Marketfield and Broad Sts. $25,000,000.

▲ **Ont., Ottawa**—OFFICE—Garfied Weston, 3 Westrose St., Toronto, office bldg., Wellington St. near Bank St. $1,000,000.

INDUSTRIAL BUILDINGS

▲ **Ga., Albany**—PLANT—Maxwell Bros., Inc., 2300 S. Morgan St., Chicago, Ill., plant. $1,000,000.

▲ **Ill., Lincolnwood**—FACTORY, etc.—Ditto, Inc., 2243 W. Harrison St., factory and office, $2,500,000. Battey & Childs, 231 S. La Salle St., Chicago, Zone 4, consult. engrs.

▲ **N. M., Albuquerque** — WAREHOUSING — Safeway Stores, Inc., 107 S. John St., warehousing, $6,000,000.

▲ **N. Y., Schenectady**—LABORATORY—General Electric Co., River Rd., 1½ story, 14,200 sq. ft. combustion laboratory. $1,800,000.

▲ **Tex., Houston**—WAREHOUSING—Joske Bros Co., 407 Main St., warehousing, $1,000,000; equip. and vehicle storage and repair shop, $250,000, 10-acre tract, Mykawa Rd. in Santa Fe Industrial Center.

▲ **Tex., Irving**—PLANT—Palmer-Stendel Co., c/o Chamber of Commerce, Irving, plant, 15-acre site adjacent CRI&P Ry. $1,000,000.

▲ **Que., Montreal East**—OIL REFINERY—Canadian Petrofine Ltd., 1015 Beaver Hall Hill, Montreal, oil refinery, Notre Dame St. East. $15,000,000.

UNCLASSIFIED

▲ **Mo., St. Louis**—PARKWAY—City, c/o Frank J. McDevitt, pres. Bd. P. Services, 304 City Hall, 12 and Market Sts., Zone 3, voted $1,500,000 bonds Sept. 29, development of parkway adjoining Aloe Plaza and Soldiers Memorial Plaza in area from 14 to 18 Sts. Market to Olive St. CD 6/4.

▲ **Saskatechewan**—PIPE LINE—Socony-Vacuum Oil Co. Ltd., Regina, 175 mi. pipe line from Fosterton to Regina. Over $40,000,000.

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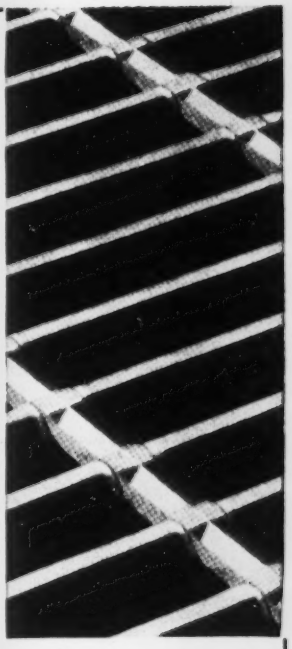

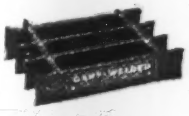

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UNIT PRICES

Water works addition, Cordova, Alabama

Additions, totaling $109,390, have been made to the Cordova, Alabama, water filtration plant. The contract was awarded to Harbert Construction Co., Birmingham, Alabama, by the Water Works & Gas Board of Jasper, Alabama.

Harbert was the lowest of five bidders, both before and after seven items had been deleted from the original specifications.

The improvements consist of adding two 300-gpm concrete filters; one 600 gpm coagulation-basin; and a 100,000-gallon, concrete, clearwell-reservoir.

The existing plant has a capacity of 900 gpm. It was constructed in the early 1920's using a round wood tub filter. Water is taken from the Warrior River; treated with aluminum and lime; prechlorinated; and given a 6-hr settling period through the coagulation basin. The new coagulation basin will have a series of copper bottom compartments for the removal of sludge without emptying the entire settling basin. An Infilco Rapid Mixer, rated at 1,500 gpm will premix the raw water before it enters the settling basin.

The job was scheduled to take 150 calendar days.

Bidders include:

1C	Harbert Const. Co., Birmingham, Alabama	$109,390
2	Patterson & Holmes, Birmingham, Alabama	116,800
5	H. R. Coker, Sylacauga, Alabama	124,154

Bids: 2-8-53 Item	Unit	Quantity	Unit Prices 1 C	2
Filter building	ls	1	$36,500	$40,000
600 GPM RC coag basin	ls	1	32,100	34,600
Yard piping	ls	1	12,800	13,100
Laboratory bldg	ls	1	5,000	5,700
100,000 gal RC, clearwell	ls	1	11,200	10,300
FI controllers, 300 gpm	ea	2	1,500	1,000
Lime dry feeder	ea	1	1,200	1,200
Aluminum dry feeder	ea	1	1,300	1,400
Earth excavation	cy	3,600	0.90	1
Rock excavation	cy	100	5.00	5
Concrete masonry	cy	10	25.00	100
Replace baffles	ls	1	2,300	2,500

Limestone surfaced bridge, Kentucky

A choice of three types of surfacing (crushed limestone, river gravel, or local bank or creek gravel) was offered to bidders on a $51,560 Kentucky Highway Department bridge and approach contract. Jack Carson, Paducah, Kentucky, was the engineer.

The lowest of six bids was entered by Davidson & Cocke who chose crushed limestone. Although their bid on the surfacing alone was 54% above that of the second low bidder, they managed to cut enough on the other items so that they could enter a total bid which fell below the second low by 1%.

The bridge will be constructed of eight, 3-ft deck girder spans and will have a 25-ft roadway.

Fourteen inch reinforced concrete piles, four to each bent, will be used in the substructure. The hand rails and superstructure will utilize air-entrained cement.

Bidders include:

1C	Davidson & Cocke, Mayfield, Ky.	$51,600[1]
2	Ford Constr Co., Bardwell, Ky.	51,868[2]
6	Huron Contr. Co., Paducah, Ky.	64,844

Bids: 7-24-53 Item	Unit	Quantity	Unit Prices 1 C	2
Clearing & grubbing	mi	0.17	$3,000	$1,000
Earthwork	mi	0.17	30,000	15,000
Structure exc (common)	cy	40	5.00	1.00
Furnish 14" reinf conc piles	lf	1,376	5.50	6.50
Drive 14" reinf conc piles	lf	1,304	6.00	6.50
Remove existing struct	ls	1	200.00	200.00
Water	mgal	14	.005	.005
Slides	cy	100	0.25	0.25
Cl "A" concrete	cy	329.6	50.00	56.00
Cl "D" concrete	cy	13.2	200.00	150.00
Steel reinforcement	lb	75,880	0.14	0.14
Crushed limestone surface	t	130	3.25	
Creek gravel surface	t	275		1.00

[1] Using crushed limestone surface
[2] Using local bank or creek gravel surface

Surfacing, Michigan

Seven bidders competed for a $55,301, federally-aided surfacing contract awarded by the Michigan State Highway Department, J. J. Becker, district engineer. The job went to the Hicks Company, Alma, Michigan, the low bidder.

Hicks underbid Otis Klett, Hartford, Michigan, the second low bidder by 8% and the high bidder by 14%. An average of 2.5% separated each of the bids.

The work will be divided into two sections: one 2.94 miles and the other 5.693 miles. A bituminous aggregate surface, 20-ft wide, will be applied to both sections.

Minimum wage rates for the project are: skilled labor, $0.95 per hr; intermediate labor, $0.85 per hr; and unskilled labor, $0.75 per hr. The work will take approximately one month.

Bidders include:

1C	The Hicks Co., Alma, Michigan	$55,301
2	Otis Klett, Hartford, Michigan	60,075
7	Detroit Conc Products Corp., Detroit, Mich	64,416

Bids: 7-29-53 Item	Unit	Quantity	Unit Prices 1 C	2
Conditioning aggr surface	sta	155	$5.00	$3.00
Bit prime coat	gal	9,100	0.165	0.16
Bit aggr surf coarse	t	2,764	5.65	6.00
Bit material applied	gal	5,200	0.165	0.18
Seal coat sand	t	250	2.00	3.50
Conc project markers	ea	2	20.00	50.00
Conditioning aggr surface	sta	300	5.00	3.00
Bit prime coat	gal	17,600	0.165	0.18
Bit aggr surf coarse	t	5,351	5.10	6.00
Bit material applied	gal	10,000	0.165	0.16
Seal coat sand	t	500	2.00	3.50
Conc project markers	ea	2	20.00	50.00

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
October 27 Massachusetts
STREETS AND ROADS
October 27 Massachusetts

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† U. S. Eng., 857 Commonwealth Ave., Boston, Mass., cancelled bids to have been opened Oct. 20, double cantilever maintenance hangar, Westover Air Force Base. ENG-19-016-54-32, CHICOPEE FALLS, MASS. $3,000,000. CD 9/28.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
October 27 Maryland November 4 New Jersey
November 5 New York
STREETS AND ROADS
October 27 Maryland October 29, November 5 New York
Noember 4 New Jersey

▲ New York—TOLL UTILITY BLDGS.—B.A. 11/5—at office Henry A. Cohen, dir. Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, 40 concrete block toll utility bldgs., plaza islands and plaza canopies and mis. work, New York State Thruway, Hudson, Catskill, Mohawk and Ontario Sects., toll utility bldgs., plaza islands and plaza canopies, Contr. No. T. U. B. 53-1, Albany, Greene, Schenectady, Herkimer, Madison, Montgomery, Oneida, Cayuga, Onondaga, Seneca, Genesee, Monroe, Ontario, Erie, Orange, Rockland, Ulster and Westchester Counties. $2,380,000. Plans deposit $50; adv. ENR 10/22.

BIDS ASKED—BUILDINGS

▲ N. Y., Brooklyn—SCHOOL—B.A. 11/9—Director Bureau Constr., 49 Flatbush Ave. exten., Zone 1, general constr. Junior High School 258, Halsey and Macon Sts., Tompkins and Marcy Aves. $3,000,000. Plans deposit $28. CD 6/24.

▲ N. Y., Oceanside—HIGH SCHOOL—B.A. 11/30—Bd. Educ., Oceanside high school. $3,000,000.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ Mason Hangar Co., Inc., Arthur A. Johnson Corp., McLean Groves & Co., Grand Central Terminal, New York, N. Y. LB. $17,260,370. Contr. LT-160-006, constr. river tunnel New Jersey rock tunnel and ventilation shaft for third tube of Lincoln Tunnel, NEW YORK and NEW JERSEY. Port of New York Auth., 111 Eighth Ave., New York 11, N. Y. Bids Oct. 13. CD 9/14.

▲ New Jersey and Pennsylvania—Delaware River Bridge Port Auth., Administration Bldg., Bridge Plaza, Camden, N. J.

Bethlehem Steel Co., Suburban Station, Phila., Pa. LB $6,610,070, est. $5,500,000. Contract 4 towers and cable anchorage steelwork for suspension bridge over Delaware River connecting Packer Ave. in Philadelphia, Pa., and Gloucester City, N. J. Bids Oct. 15. CD 9/28.

▲ NEW JERSEY—State Hy. Dpt., State Hy. Office Bldg., 1035 Parkway Ave., Trenton,

Francis A. Canuso & Sons, 173 W. Roosevelt Blvd., Phila., Pa., LB, $1,671,187, paving 3.746 mi. U.S. Route 130 from Berkley to Repaupo Rds., Gloucester Co.; LB $2,165,791, grading, paving, bridge and walls, 0.965 mi. exten. of Route 26 (Trenton Freeway) from Strawberry St. to Whitehead Rd., Mercer Co.;

Atlantic County Constr. Co., 245 N. Virginia Ave., Atlantic City, N. J., LB, $83,678, drainage imprvs. for Ocean Highway (Shore Road) at Decatur Ave., Pleasantville, Atlantic Co.;

Charles Vancheri, 227 Central Ave., Hammonton, N. J., LB, $482,984, wid'n., resurf. 5.081 mi. U.S. Route 30 from U.S. Route 206 to Clarks Branch, Atlantic and Camden Counties. Bids Oct. 6. CD 9/17.

▲ NEW JERSEY—New Jersey Hy. Auth., State Hy. Office Bldg., 1035 Parkway Ave., Trenton,

Peter W. Kero, Inc., 615 North Ave., Lyndhurst, N. J. LB, $2,825,254, grading, drainage, paving, structures 1.3 mi. Garden State Parkway from Rodwell Ave., Newark, to D. L. & W. R.R., East Orange, (Contract 63), Essex Co. Bids Oct. 9. CD 9/21.

▲ NEW JERSEY—New Jersey Highway Authority, 1035 Parkway Ave., Trenton,

S. J. Groves & Sons Co., P.O. Box 185, Woodbridge, N. J. LB $7,777,778. Contracts 28 and 31, Sect. Garden State Parkway, Atlantic Co. Bids 10/14. CD 9/21.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Joland Homes, c/o Stanley Klein, archt., 89-31 161 St., Jamaica, N. Y. Owner Builds. $3,000,000. 225 HOUSES, 57-acre tract, Woodbury and Ketcham Rds., HICKSVILLE, N. Y.

▲ Chanin Organization, 122 E. 42 St., New York 17, N. Y. Owner Builds. $10,000,000. 19 story APARTMENT on block bounded by Second and Third Aves., 68 and 69 Sts., NEW YORK, N. Y.

▲ F. A. Collins, Inc., City Line and Belmont Ave., Cynwyd, Pa. Separate Contracts, $4,500,000 RESIDENTIAL DEVELOPMENT, Rancccccas Woods, MOORESTOWN, N. J.

▲ Ambler Development Co., Ambler, Pa. Separate Contracts. $305,000. RESIDENTIAL DEVELOPMENT, Spring Garden St.; $3,000,000; RESIDENTIAL DEVELOPMENT, Bannockburn St., etc., AMBLER, PA.

▲ Hughes Foulkrod & Co., 1505 Race St., Phila., Pa., CA $2,037,551. car repair SHOP, HOLLIDAYSBURG, PA. Pennsylvania R. R., J. L. Gressitt, ch. engr., Suburban Station Bldg., 1617 Pennsylvania Blvd., Phila. 4, Pa. Bids Sept. 24. CD 9/18.

▲ Cauldwell-Wingate Co., 101 Park Ave., New York, N. Y. CA Est. $15,000,000. 20 story OFFICE in "Penn Center" PHILA., PA. Uris Brothers, 575 Madison Ave., New York, N. Y. CD 9/20, under CA.

▲ F. A. Collins, Inc., City Line and Belmont Ave., Cynwyd, Pa., Separate Contracts, $2,000,000 RESIDENTIAL DEVELOPMENT, Capital Green, DOVER, DEL.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
October 27 North Carolina, Virginia
STREETS AND ROADS
October 27 North Carolina, Virginia

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† J. A. Jones Constr. Co., 209 W. 4 St., Charlotte, N. C., CA, $2,019,598. intake structures and sluice outlet works, Buford Dam, Chattahoochee River, Buford, Inv. 54-9, GEORGIA. U.S. Eng., P.O. Box 1169, Mobile 7, Ala. CD 10/13, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Shelby Constr. Co. 1106 Canal St., New Orleans, La. CA $4,888,000, 2 story, masonry, 628 HOUSING units, Public Housing Projs. VA-6-2 and VA-6-3, NORFOLK, VA. Norfolk Redevelopment & Housing Auth., Kresge Bldg., Norfolk, Va. Bids Oct. 7. CD 10/12, under LB.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
October 28 Michigan
STREETS AND ROADS
October 28 Michigan November 20 Ohio

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ OHIO—Ohio Turnpike Comn., 139 E. Gay St., Columbus,

J. A. Jones Constr. Co., 209 W. 4 St., Charlotte, N. C. LB $8,999,855, Sect. 31, three single bridges, three twin bridges, three box culverts for drainage, grading, drainage structures, paving approx. 3.7 mi. from point approx. 3,900 ft. east of Thomas Rd. exten. eastwardly to point approx. 916 ft. east of State Rte. 299 the interchange with State Rte. 250, Erie Co.; Sect. 32, two single bridges, two twin bridges, two box culverts for drainage, grading, drainage, structures, paving, approx. 4.1 mi. from point approx. 4,321 ft. west of Patten Tract Rd. exten. eastwardly to point approx. 3,900 ft. east of Thomas Rd., Sect. 33, two single bridges, three twin birdges and four box culverts for drainage, grading, drainage structures, paving approx. 3.1 mi. from point approx. 465 ft. west of Billings Rd. exten. eastwardly to point approx. 4,321 ft. west of Patten Tract Rd. Erie Co.;

W. L. Johnson Constr. Co. & Assoc., Shook Rd., Columbus, O., LB $2,431,106, Sect. C-32, LB $2,546,927, Sect. C-33, LB $4,468,481, Sects. C-32 and C-33;

Peter Kiewit Sons Co., 1024 Omaha Natl. Bank Bldg. and Condon-Cunningham Co., 4229 Lafayette St., Omaha, Neb. LB $4,320,750, Contr. C-31, LB $6,646,411, Contrs. C-31 and C-32. Bids Sept. 29. CD 8/31.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ A. W. Kutsche & Co., 2924 Grand Blvd., Detroit, Mich. CA $2,674,000, est. $2,500,000. brick, steel, concrete COUNTY BLDG., Main, Howard, Fourth and Ann Sts., ANN ARBOR, MICH. Bd. Supervs. Washtenaw Co., Ann Arbor, Mich. CD 10/8, under LB.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
October 30 Montana
STREETS AND ROADS
October 30 Montana

BIDS ASKED—BUILDINGS

▲ Mo., Kansas City—SCHOOL—B.A. 11/17—Bd. Educ., c/o Dr. G. Dewey Smith, asst. supt., Library Bldg., R. T. Coles Junior High School, 23 and Garfield Sts. $2,160,000. Marshall & Brown, 1016 Baltimore St., Kansas City, Mo., archts. CD 12/4/51.

SOON LETS CONTRACT—BUILDINGS

▲ Kansas—HOUSING—Federal Housing Admin., Ed Chapman, Jr., dir. National Bank of Topeka Bldg., Topeka, soon lets contract construct, manage and finance rental housing for defense workers, military and civil personnel, in Prairie, Quindaro, Shawnee and Wyandotte Twps., Wyandotte Co.; Aubry, Mission, Oxford and Shawnee Twps., Johnson Co. $3,000,000.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Frum-Colnon Contg. Co., 1706 Olive St., St. Louis 3, Mo. and Peter Kiewit Sons Co., 1024 Omaha National Bank Bldg., Omaha, Neb., CA $12,574,850. RECORDS CENTER incl. 6 story 282x728 ft. main bldg., 1 story, 103x236 ft. cafeteria, assembly hall adjacent bldg. other auxiliary bldgs., facilities. ENG-23-028-54-11B, OVERLAND (ST. LOUIS 14, P. O.), MO. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Sept. 30, awarded Oct. 9. CD 10/6, under LB.

▲ Sheridan Village Shopping Center, Inc., 512 S. Cheyenne St., Tulsa, Okla. Purchase and Hire. $2,000,000. SHOPPING CENTER, Admiral Pl. and Sheridan Rd., TULSA, OKLA. McCune & McCune, 1908 Utica Square, Tulsa, Okla., archts.

▲ H. B. Zachry Co., Constr. Dpt., Transit Tower, San Antonio, Tex., financing, planning and constructing underground Public Auto Parking GARAGES, LB Approx. $3,500,000, at Travis Park, under Alamo Plaza; under Main Plaza; under area of LaVillita, SAN ANTONIO, TEX. City, Ralph Winton, city mgr., City Hall, Military Plaza, San Antonio, Tex. Bids Oct. 13. CD 9/10.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
October 29 Washington November 4, 12 California
STREETS AND ROADS
October 29 Washington November 4, 5, 12, 13 California

BIDS ASKED—BUILDINGS

▲ Calif., San Marino—SCHOOL—B.A. 11/5—San Marino High School, 1700 Huntington Dr., 1 story, rein.-con. San Marino High School addns. $1,500,000. Plans deposit $100. Marsh, Smith & Powell, 208 W. 8 St., Los Angeles, archts. CD 10/10/52.

▲ Calif., Porterville—WARD BUILDINGS—B.A. 11/24—State Div. Architecture, P. Wks. Bldg., Sacramento, 14 ward bldgs., Porterville State Hospital, Phases 3 and 4. Plans deposit $100.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ CALIFORNIA—State Div. Hys., P. Wks. Bldg., Sacramento,

Chas. L. Harney, Inc., 575 Berry St., San Francisco, Calif., CA, $3,680,237, portion of bridge of misc. roadwork between 8 and 4 Sts., San Francisco Co. Bids Sept. 30, awarded Oct. 9. CD 10/6, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Dinwiddie Constr. Co., Crocker Bldg., San Francisco, Calif., CA, $12,500,000 25 story OFFICE, SAN FRANCISCO, CALIF. Equitable Life Assurance Society of U.S., 315 Montgomery St., San Francisco, Calif. Bids Oct. 9. CD 9/22.

ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† Williams Brothers Co., Natl. Bank of Tulsa Bldg., Tulsa, Okla., LB $29,001,287, est. $28,697,241. 615 mi. oil pipe line, Haines to Fairbanks, ALASKA. U. S. Eng., 3013 Arcade Bldg., Seattle 1, Wash. Bids Oct. 14. CD 8/27.

PUERTO RICO

▲ Puerto Rico, San Juan—HIPPODROME, etc.—B.A. 12/31—Puerto Rico Race Track Comn., San Juan, hippodrome, incl. race track. $2,000,000.

FOREIGN

BIDS ASKED—HEAVY CONSTRUCTION

▲ Iraq—B.A. 1/14—Development Board, Baghdad, Hindiya Hy. bridge over Euphrates River at Hindiya (Twairij). Tender documents may be inspected on or after October 14 at offices of owner or at Embassy or Legation of the Government of Iraq, Washington, D. C., Paris, Brussels or Rome, or at the office of Maunsell, Posford & Pavry, Abbey House, Victoria St., Westminster, London, S.W. 1, England.

(Proposal Advertisements see pp. 54 to 59)

Borrowing costs are declining: Mortgages start getting easier

As expected (ENR Sept. 24, p. 21), the cost of borrowing money for construction keeps on getting a little bit cheaper. Now there are even signs that after six months of tight conditions in the mortgage market, it is becoming a little easier for development builders to get lenders to take on VA and FHA mortgages.

This week, for instance, another big turnpike revenue bond issue sold out like hotcakes. The New Jersey Turnpike Authority sold to underwriters $150 million of 35-year revenue bonds at an interest cost of 3.49%. The underwriters immediately resold the bonds, which were soon being quoted at a premium above the offering price.

• **Strong market**—There was a strong market for new corporate securities, too. Interest cost to recent borrowers has been getting progressively lower. Recently, for instance, Mississippi Power Co. borrowed $4 million for construction at an interest cost of 3.71%, considerably less than the 3.995% it cost Louisiana Power & Light Co. back in mid-September to borrow on a bond issue that was very similar from a credit standpoint. This week, a comparable issue for $8 million by Rockland Light & Power Co. sold to underwriters at 3.635%.

• **Mortgages, too**—This steady decrease in the cost to local governments and corporations of borrowing long-term money has been going on since June. It was bound eventually to have some effect on the mortgage market.

For many of the investors who buy bonds—for instance, life insurance companies and banks—are also mortgage investors. When bond yields decline, mortgages become more attractive. That's why some mortgage brokers in the New York area report that more investors are coming into the market to buy government-guaranteed VA and FHA mortgages. This trend doesn't amount to much yet. But if bond yields keep on declining, the home builders will find that their financing problems will get easier.

• **GI loans**—GI home loans give diverse reflections of the easing mortgage market. Loan applications to the Veterans Administration in September were 9% higher than in August, and August applications in their turn had topped July by the big margin of 23%.

But requests from builders to VA for setting the appraisal values on proposed houses—a necessary prelude to later GI loan applications—show no such definite trend. In August they pointed upward—contrary to the usual seasonal trend—with an increase of 7% over July, but in September they dropped nearly 20% below August.

Loan applications to VA are the significant indicators of GI home loan financing in the next month or two. These applications are signed by the lender as well as by the veteran. They come in to VA months after the agency has established the appraised value of a proposed property—and they show the results of financing arrangements already made or closed.

• **Above average**—GI home loan applications for August and July are well above the average monthly rate of 25,636 received by VA during the first seven months of this year. September applications totaled 34,084, the highest monthly total since April 1951, when VA received 36,517.

T. B. King, VA's spokesman on loan guaranty matters, cautions that the August-September upsurge may result partly from the rush of lenders to get loan applications approved before the VA 4% gratuity to veteran borrowers (paying up to $160 on closing costs) was suspended Aug. 31.

And King's explanation of the September drop in appraisal requests runs counter to the theory that the mortgage market is loosening. King says that builders of large projects may be having trouble in getting advance financing commitments for their proposed developments.

CONSTRUCTION TRENDS

Steel mills are starting to absorb freight on some products. That could affect new plant construction.

Construction men should take note of a new trend in the steel industry. Some leading steel producers are starting to absorb freight charges on types of steel which are no longer in tight supply. If production of steel continues to catch up with demand, this could have an important effect on management ideas about location of new industrial plants.

This is a long-term prospect, not an immediate possibility. Right now, freight absorption applies to a limited range of steel products, and only in those areas where production is outpacing demand.

In the past, decisions about sites for new plants which used steel were always influenced by the location of steel suppliers. Before 1948, steel prices were set by a multiple basing-point system. Prices were quoted in terms of a number of selected cities. The steel buyer paid the freight charge from the basing point to his own factory, even if the steel actually came from a steel mill next door.

The steel basing-point system was dropped in 1948 after the Supreme Court ruled that a similar pricing setup was illegal in the cement industry. Since then, the user has had to pay the freight. And he has been willing to pay it because steel has been almost continuously in heavy demand.

Under such circumstances, it was good sense for new plants to be located near steel mills. And there was some tendency for steel users to group themselves around the mills. This happened, for instance, in the Pittsburgh area.

However, the expansion in steel capacity, along with the completion of a good deal of U. S. industry's postwar capital expansion plans, has brought supply and demand for steel into better balance. For some steel products, tinplate, galvanized sheets, and several stainless items, the sellers' market is fading. That's the reason why U. S. Steel Corp. and several others have announced that they will absorb freight on these products.

BLS indexes

Building materials decline —machinery up—in September

Declines in plywood, lumber, and millwork offset increases in prices of other building materials and brought the Bureau of Labor Statistics wholesale price index for building materials down slightly for September. The decline was 0.3%, leaving the index at 120.4 (1947-1949=100).

The only major decline was in plywood, where the BLS sub-index dropped 4.4%. There was a decline of 0.8% in lumber (primarily in fir prices). Millwork was off 0.2%. Most other sub-indexes showed slight gains. The largest was in concrete products (up 1.1%), hardware (up 0.9%), and paint (up 0.8%).

Compared with a year ago, the wholesale index is up 1.4%. For the 12 months, the biggest gains are in hardware (up 10.5%), structural clay products (up 8.6%), metal doors, sash and trim (up 8.2%), and building board (up 6.2%). The only decline is a 1.9% drop in the very important lumber sub-index.

• **Construction machinery**—In the field of construction machinery and equipment, the BLS index moved up slightly in September. Although the increases were limited to tractors and power cranes, they brought the index up 0.3% to a new high of 130.9 (1947-1949=100). That's a 4% gain in the 12 months since September 1952.

During the last year, the biggest gains have been in non-farm tractors (up 6.9%), power cranes (up 4.4%), and mixers and pavers (up 4.4%). There were no declines in any category of construction machinery.

Utility man predicts huge power expansion

The electric power industry will double its capacity in the next 10 years, spending $50 billion. That's the prediction made last week by a leading utility executive, Elmer Lindseth, president of Cleveland Electric Illuminating Co.

Earlier this year, the Edison Electric Institute estimated (ENR Jun. 11, p. 102) that the industry would spend $12 billion between 1953 and 1956. ENGINEERING NEWS-RECORD estintates that approximately 20% of the money spent to increase generating capacity and distribution facilities goes for construction.

The natural gas industry will also continue its postwar boom, according to J. French Robinson, president of Consolidated Natural Gas Co. He figures that by 1956, 14,500,000 families will be using natural gas to heat their homes, compared with eleven million now and four million in 1940.

Prefab manufacturer offers $5,500 house

One of the leading manufacturers of prefabricated houses, National Homes Corp., of Lafayette, Indiana, has arrested the trend toward expensive prefabs by introducing a $5,500 two-bedroom house. National is also putting out a four-bedroom model which sells for $6,100. In both, price of an $800 lot is included.

Both models qualify for financing under FHA Title I, with its low down-payment requirement, and meet the minimum requirements under FHA Title 2. On a 30-year basis, monthly payments would run about $36 a month for the two-bedroom house and $38 a month for the four-bedroom.

National explains that the very low cost of these models is due to its mass purchasing power, and its almost completely automatic production line. It also says that design of the two models has been planned to eliminate much plant and field labor.

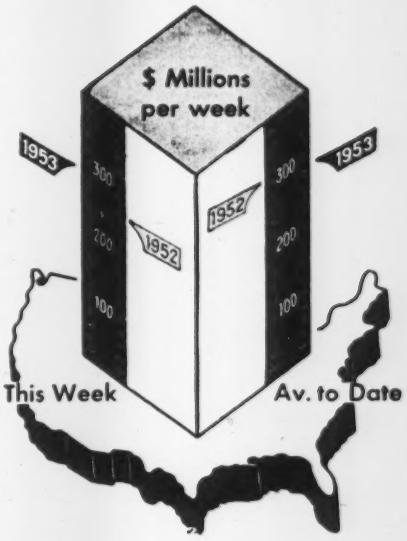
Business briefs . . .

• **Contractors** who buy materials in Colorado will no longer be allowed to avoid paying the state's 2% sales tax when the materials are to be used in public construction. The state revenue department has ruled that the public agencies themselves should apply for exemption from the tax, rather than contractors. John F. Healy, deputy revenue director, says contractors have abused the exemption privilege by diverting some materials to other jobs.

• **Another merger:** Merritt-Chapman & Scott Corp. has acquired 98% stock control of Fitz Simons & Connell Dredge & Dock Co., of Chicago, through an exchange of shares. Fitz Simons has been active in industrial, marine, and heavy construction, mainly in Illinois and Indiana.

Activity This Week

As reported to ENR
(in millions of dollars)



Amount of contracts let

	This Week	Cumulative 43 wks 1953	1952	% chge
Federal	$23.9	$1,257.8	$4,141.3	−70
State and municipal	115.8	4,180.5	3,495.2	+20
Total pub.	139.7	5,438.3	7,636.5	−29
Total priv.	149.6	7,068.9	5,789.0	+22
U. S. total	**$289.3**	**$12,507.2**	**$13,425.5**	**−7**
Contracts by type of work				
Waterworks	$4.6	$197.9	$185.0	+7
Sewerage	5.1	362.5	242.8	+49
Bridges	37.7	579.5	340.3	+70
Highways	15.8	1,495.5	1,250.1	+20
Earthwork, waterways	5.1*	312.4	416.8	−25
Buildings:				
Public, excl. hsg.	44.2	1,435.6	3,972.7	−64
Housg., pub.	4.9	339.5	549.0	−38
Housg., priv.	66.7	2,997.0	2,480.8	+21
Commercial	34.0	979.2	556.4	+76
Industrial	43.0	2,282.5	2,310.4	−1
Unclassified	28.2	1,525.6	1,121.2	+36
Total	**$289.3**	**$12,507.2**	**$13,425.5**	**−7**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

New capital for construction

	Week of Oct. 15 1953	Cumulative 42 Wks 1953	% chge 1952-53
Corporate securities	$29.6	$3,639.5	+15
State and municipal:			
Excluding housing	55.2	3,352.2	+34
Housing	4.4	237.2	−17
Federal loans	0.0	93.0	−70
Federal aid	...	770.9	+40
Total non-federal	**$89.2**	**$8,092.8**	**+19**
Federal appro.:			
In U. S.	...	1,566.7	−79
Outside U. S.	...	28.9	−85
Total new capital	**$89.2**	**$9,688.4**	**−33**

ENR indexes		Base Years = 100 1913	1926	1949
	1953			
Construction cost	Oct	610.76	293.59	128.04
	Sept	610.17	293.31	129.91
Building cost	Oct	436.31	235.86	124.03
	Sept	436.10	235.74	123.97
Volume	Sept	487	198	141
	Aug	487	198	141

OFFICIAL PROPOSALS

Bids: November 10, 1953

Central Air Conditioning System

THE PORT OF NEW YORK AUTHORITY
PORT AUTHORITY BUILDING
CONTRACT EXD-130.005

Sealed proposals for the furnishing and installation of piping and ducts for the central air conditioning system at the Port Authority Building will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1111, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M., on Tuesday, November 10, 1953, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1111, and copies will be furnished upon deposit of $50.00 per set. The deposit shall be delivered to the Treasury Department, Room 1061, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than forty days after the opening of proposals. The deposit will be forfeited if the documents are not so returned within the forty days.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

Bids: November 24, 1953

New Jersey Turnpike Authority

NEWARK BAY-HUDSON COUNTY EXTENSION
CONTRACTS NO. N-1, N-1A AND N-1B

Proposals will be received for Contract No. N-1 (or Contracts No. N-1A and N-1B) which involves the construction of four reinforced concrete main span piers, adjacent west approach pier and the fifteen adjacent east approach piers, all in connection with the construction of the Newark Bay Bridge for the Newark Bay-Hudson County Extension of the New Jersey Turnpike from its Newark Airport Interchange to the Holland Tunnel in Jersey City, New Jersey. Contract No. N-1A comprises the sixteen approach piers, Nos. W-3 and E-3 to E-17 inclusive, and Contract No. N-1B comprises the four main span piers, Nos. E-1, E-2, W-1 and W-2.

The principal items of work include:

	Contract No. N-1A	Contract No. N-1B
Dredging .....(cu. yds.)	191,200	
Open Foundation Excavation ..(cu. yds.)	5,000	19,000
Driving Steel Piles .....(lin. ft.)	135,000	115,000
Concrete .....(cu. yds.)	23,150	31,420
Granite Masonry .....(cu. yds.)	1,570	595
Treated Fender Piles .....(lin. ft.)		18,500
Creosoted Timber in Fenders ..(M.F.B.M.)		

Principal items of work for Contract No. N-1 equal the sum of the quantities listed for Contracts No. N-1A and N-1B. If a bidder submits a proposal for Contract No. N-1, he must also submit proposals for Contracts No. N-1A and N-1B in order that the Authority may equitably compare proposals.

Proposals will be received at the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey on November 24, 1953, until 11:00 A.M. Eastern Standard Time, at which time and place said proposals will be publicly opened and read.

The receipt and opening of proposals are subject to proper prequalification of the bidder in accordance with the regulations adopted by the New Jersey Turnpike Authority. Bidders must also submit with their proposals a revised financial statement and a statement of plant and equipment.

Contract documents may be examined during office hours after October 22, 1953 at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, New York. Contract documents will be furnished upon deposit of Fifteen Dollars ($15.00) for each set, upon application to the Authority. The deposit will be refunded if the contract documents are returned in good condition to the Authority within fifteen (15) days of the receipt of proposals.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

OFFICIAL PROPOSALS

Bids: November 24, 1953

New Jersey Turnpike Authority

NEWARK BAY-HUDSON COUNTY EXTENSION
CONTRACT NO. N-4

Proposals will be received for Contract No. N-4 which involves the construction of the east abutment and adjacent sixteen east approach land piers E18 to E33 inclusive, all in connection with the construction of the Newark Bay Bridge for the Newark Bay-Hudson County Extension of the New Jersey Turnpike from its Newark Airport Interchange to the Holland Tunnel in Jersey City, New Jersey.

The principal items of work include:

	Contract No. N-4
Borrow Excavation	145,000 cu. yds.
Open Foundation Excavation	3,500 cu. yds.
Driving Steel Piles	47,000 lin. ft.
Untreated Timber Piles	15,000 lin. ft.
Concrete	5,940 cu. yds.
Reinforcement Steel	540,000 lbs.

Proposals will be received at the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey, on November 24, 1953, until 11:00 A.M., Eastern Standard Time, at which time and place said proposals will be publicly opened and read.

The receipt and opening of proposals are subject to proper prequalification of the bidder in accordance with the regulations adopted by the New Jersey Turnpike Authority. Bidders must also submit with their proposal a revised financial statement and a statement of plant and equipment.

Contract documents may be examined during office hours after October 22, 1953, at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, New York. Contract documents will be furnished upon deposit of Fifteen Dollars ($15.00) for each set, upon application to the Authority. The deposit will be refunded if the contract documents are returned in good condition to the Authority within fifteen (15) days of the receipt of proposals.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

Bids: December 8, 1953

New Jersey Turnpike Authority

NEWARK BAY-HUDSON COUNTY EXTENSION
CONTRACTS NO. N-2, N-2A, N-2B, N-2C, N-2D AND N-2E

Proposals will be received for Contract No. N-2 (or Contracts No. N-2A, N-2B, N-2C, N-2D and N-2E) which involves the construction of the superstructure steelwork in connection with the construction of the Newark Bay Bridge for the Newark Bay-Hudson County Extension of the New Jersey Turnpike from its Newark Airport Interchange to the Holland Tunnel in Jersey City, New Jersey. Contract No. N-2A comprises the main truss spans, Contract No. N-2B comprises the west girder spans, Contract No. N-2C comprises the east girder spans, Contract No. N-2D comprises the west beam spans and Contract No. N-2E comprises the east beam spans.

The principal items of work include:

	N-2A	N-2B	N-2C	N-2D	N-2E
Structural Carbon Steel, Tons	4,125	3,600	5,100	3,000	1,750
Structural Silicon Steel, Tons	2,220	1,825	3,000		
Furnishing Metal Railing, Lin. Ft.	2,540	4,030	5,730	4,400	2,400
Erecting Metal Railing, Lin. Ft.	2,540	4,030	5,730		
Suspenders, Lin. Ft.	7,200				

Principal items of work for Contract No. N-2 equal the sum of the quantities listed for Contracts No. N-2A, N-2B, N-2C, N-2D and N-2E. If a bidder submits a proposal for Contract No. N-2, he must also submit proposals for Contracts No. N-2A, N-2B, N-2C, N-2D and N-2E in order that the Authority may equitably compare proposals.

OFFICIAL PROPOSALS

Proposals will be received at the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey, on December 8, 1953, until 11:00 A.M., Eastern Standard Time, at which time and place said proposals will be publicly opened and read.

The receipt and opening of proposals are subject to proper prequalification of the bidder in accordance with the regulations adopted by the New Jersey Turnpike Authority. Bidders must also submit with their proposal a revised financial statement and a statement of plant and equipment.

Contract documents may be examined during office hours after October 22, 1953 at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, New York. Contract documents will be furnished upon deposit of Fifteen Dollars ($15.00) for each set, upon application to the Authority. The deposit will be refunded if the contract documents are returned in good condition to the Authority within fifteen (15) days of the receipt of Proposals.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

Bids: November 24, 1953

New Jersey Turnpike Authority

NEWARK BAY-HUDSON COUNTY EXTENSION
CONTRACTS NO. N-3, N-3A and N-3B

Proposals will be received for Contract No. N-3 (or Contracts No. N-3A and N-3B) which involves the construction of the reinforced concrete west approach piers, exclusive of the west approach pier adjacent to the four main span piers, all in connection with the construction of the Newark Bay Bridge for the Newark Bay-Hudson County Extension of the New Jersey Turnpike from its Newark Airport Interchange to the Holland Tunnel in Jersey City, New Jersey. Contract No. N-3A comprises the twenty-nine most westerly approach piers, Nos. W16 to W44 inclusive. Contract No. N-3B comprises the twelve west approach piers, Nos. W4 to W15 inclusive, between the most westerly approach piers and the west approach pier adjacent to the main span pier.

The principal items of work include:

	Contract No. N-3A	Contract No. N-3B
Borrow Excavation		70,000 cu. yds.
Open Foundation Excavation	9,000 cu. yds.	3,500 cu. yds.
Untreated Timber Piles	70,000 lin. ft.	
Driving Steel Piles	24,000 lin. ft.	78,000 lin. ft.
Concrete	9,930 cu. yds.	8,390 cu. yds.
Reinforcement Steel	982,500 lbs.	627,700 lbs.

Principal items of work for Contract No. N-3 equal the sum of the quantities listed for Contracts No. N-3A and N-3B. If a bidder submits a proposal for Contract No. N-3, he must also submit proposals for Contracts No. N-3A and No. N-3B in order that the Authority may equitably compare proposals.

Proposals will be received at the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey, on November 24, 1953, until 11:00 A.M., Eastern Standard Time, at which time and place said proposals will be publicly opened and read.

The receipt and opening of proposals are subject to proper prequalifications of the bidder in accordance with the regulations adopted by the New Jersey Turnpike Authority. Bidders must also submit with their proposal a revised financial statement and a statement of plant and equipment.

Contract documents may be examined during office hours after October 22, 1953 at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, New York. Contract documents will be furnished upon deposit of Fifteen Dollars ($15.00) for each set, upon application to the Authority. The deposit will be refunded if the contract documents are returned in good condition to the Authority within fifteen (15) days of the receipt of Proposals.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

Bids: November 4, 1953

Reconstruction of Deck & Repaving of Approach Spans

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:

RT. 35 (1927)—BRIDGE OVER INLAND WATERWAY CANAL RECONSTRUCTION OF DECK and REPAVING OF APPROACH SPANS

Reconstruction of Deck on Bascule Span and Repaving of Approach Spans on Bridge over Inland Waterway Canal on Route 35 (1927) in West Point Pleasant, Ocean County. The principal items of construction are:

Estimated:
1,675 sq. ft. Steel Grid Flooring
14,300 lbs. Structural Steel
54 tons MA-BC-2 Pavement

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, State Highway Office Bldg., 1035 Parkway Ave., Trenton, N. J., on Wednesday, November 4, 1953, at eleven o'clock (11:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Bldg., 1035 Parkway Ave., Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed:
STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

Bids: November 19, 1953

Ohio Turnpike Commission

Contract C-4a
Contract C-5a
Contract C-4a&5a
Contract C-4b
Contract C-5b
Contract C-4b&5b

Sealed proposals will be received by the Ohio Turnpike Commission at or before 10:00 A.M., Eastern Standard Time, November 19, 1953, for the performance of each of the Contracts enumerated above.

The work covered by Contract C-4a consists generally of the construction of grading, drainage, structures, and paving of approximately 3.7 miles in Construction Section 4 of Ohio Turnpike Project No. 1, beginning at a point about 2,000 feet west of Turner Road at Turnpike Centerline Station 296+00 in Mahoning County, and extending eastwardly to a point about 4,500 feet east of State Route No. 46 at Turnpike Centerline Station 491+61 in Mahoning County, and the construction of an engineer's office building and facilities on or near the site of the work.

The work covered by Contract C-5a consists generally of the construction of grading, drainage, structures, and paving of approximately 5.3 miles in Construction Section 5 of the Ohio Turnpike Project No. 1, beginning at a point about 1,480 feet west of the intersection of Gladstone Road and State Route No. 45 at Turnpike Centerline Station 144+00 in Mahoning County, and extending eastwardly to a point about 2,000 feet west of Turner Road at Turnpike Centerline Station 296+00 in Mahoning County, and the construction of engineer's office buildings and facilities on or near the site of the work.

The work covered by Contract C-4a&5a, which covers a combination of Construction Sections 4 and 5, is the construction as above and elsewhere herein generally described for the individual Construction Sections taken together.

Contracts C-4b, C-5b, and C-4b&5b require performance of the same work and contain the same incidental requirements as Contracts C-4a, C-5a, and C-4a&5a, respectively, except that the completion dates are different for all work east of the turnpike interchange with State Route 18, including all parts of said interchange necessary to connect the turnpike with said route. The contracts containing the letter "b" in their designations are thus alternates to those containing the letter "a" and only two individual contracts or one combination contract will be awarded.

In Construction Section 4, the principal structures to be built are six reinforced concrete box culverts, one reinforced concrete retaining wall, three single bridges of five spans each and three twin bridges of three spans each (each twin bridge consisting of two separate but nearly identical and parallel structures). All bridges are steel beam bridges supported on reinforced concrete abutments and bents. The abutments of all bridges are to be on cast-in-place reinforced concrete piles and the bents of all bridges are to be on spread footings.

In Construction Section 5, the principal structures to be built are seven reinforced concrete box culverts, three single steel beam bridges, three twin steel beam bridges, one single steel girder bridge and one twin steel girder bridge (each twin bridge consisting of two separate but nearly identical and parallel structures). The bridges are of from three to six spans each, supported on reinforced concrete abutments and bents. The abutments of all bridges and the bents of the twin six span bridge are to be on cast-in-place reinforced concrete piles. The bents of the other seven bridges are to be on spread footings.

Approximate quantities of the major items of construction for Construction Section 4 are as follows:

Roadway Excavation	700,000 cu. yds.
Borrow	360,000 cu. yds.
Structural Concrete	13,200 cu. yds.
Reinforcing Steel	2,000,000 pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	2,300,000 pounds
Concrete Bearing Piles	9,000 lineal ft.
10" Reinforced Concrete Pavement	102,000 sq. yds.

Approximate quantities of the major items of construction for Construction Section 5 are as follows:

Roadway Excavation	1,350,000 cu. yds.
Borrow	112,000 cu. yds.
Structural Concrete	15,000 cu. yds.
Reinforcing Steel	2,000,000 pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	3,000,000 pounds
Concrete Bearing Piles	26,000 lineal ft.
10" Reinforced Concrete Pavement	175,000 sq. yds.

Make Plans Accessible to Distant Bidders

Plans and specifications for inspection by distant bidders may be filed at any of ENGINEERING NEWS-RECORD offices without charge. Or a sufficient supply may be deposited at such of our offices as seem desirable subject to your usual requirements in the matter of deposits, etc. (We assume full responsibility for return of plans or collection and return of deposits).

For each contract, fabricated structural steel and structural expansion and/or contraction joints will be furnished by the Commission.

These Construction Sections have been twice previously advertised. Proposal forms, Plans, Cross Sections and Special Provisions for each of Construction Sections 4 and 5 as formerly advertised are now obsolete. Any person who obtained any of these documents pursuant to the former advertisement and desires to bid for these Construction Sections, or any of them, must obtain a new set of Contract Documents for the letting advertised in this notice, except that he need not obtain a new set of General Specifications or of those Supplemental Specifications already in his possession and applicable to any or all of these contracts, as indicated in the Special Provisions comprising a part of the new Contract Documents.

Copies of the Plans and General Specifications for said Contracts are immediately available for public inspection or purchase at the office of the Chief Engineer, Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

General Specifications for Ohio Turnpike Project No. 1	$ 5.00
Plans (also soil profiles and boring logs), per set, per construction section	15.00
Cross Sections, per set, per construction section	25.00

Forms or copies of all remaining Contract Documents, including Proposals for each of the Contracts set forth above; of the Affidavit which must accompany any such Proposal; of this Notice to Bidders; of the Special Provisions applying to said Contracts; of the Contract to be entered into with the (or each) successful Bidder; and of the Contract Bond to be furnished with such Contract, will be furnished upon request and without charge to any interested person at the aforesaid Chief Engineer's office on and after October 19, 1953.

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Each Proposal must be accompanied by a certified check or checks on a solvent bank or banks payable to the order of the Ohio Turnpike Commission in an amount not less than $100,000 per Construction Section covered by the Contract on which the Bidder bids. If the Bidder shall tender bids for more than one Contract, said amount shall be not less than $100,000 per Construction Section covered by the Contracts on which he shall tender Proposals; provided, however, that if one or more Construction Sections are included in more than one Contract for which the Bidder shall tender Proposals, the Bidder need furnish only $100,000 for each such section, notwithstanding such duplication. The Commission may at any time cash any such check. Each such check or the proceeds thereof will be held by the Commission as a guaranty that, if any Proposal guaranteed thereby is accepted a contract will be entered into and the performance of the Proposal secured.

Each such check or the proceeds thereof will be returned or forfeited as provided in paragraphs G-3.03 and G-3.06 of the aforesaid General Specifications, provided that if there be a forfeiture, it shall be in an amount equal to $100,000 per Construction Section covered by the Proposal with respect to which the forfeiture occurs, and any excess will be returned to the Bidder.

All bids must be received at or before 10:00 A.M., Eastern Standard Time, November 19, 1953, in the offices of the Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. At said hour, the bid box wil be removed to the Nell House Hotel, 41 South High Street, Columbus, Ohio, where all Proposals will be publicly opened and read.

The award of any of the above-enumerated Contracts, if any award be made, will be to the Bidder or Bidders whose Proposal or combination of Proposals is lowest and best for the performance of the work, taken as a whole, and complies with all the prescribed requirements. In determining which Proposal or combination of Proposals is lowest and best, the Commission reserves the right to consider all financial and other advantages which may accrue from early completion of the work as provided for in Contracts C-4a, C-5a, and C-4a&5a. The Commission reserves the right to reject any or all Proposals and to waive technicalities.

OHIO TURNPIKE COMMISSION

OFFICIAL PROPOSALS

Bids: November 4, 1953

Boiler Conversions

THE PORT OF NEW YORK AUTHORITY
LA GUARDIA AIRPORT
JACKSON HEIGHTS, NEW YORK

HANGAR NO. 7
CONTRACT O & M 215
PROPOSAL NO. 257

Sealed proposals for furnishing all labor, material and equipment to convert three automatic coal stokers to automatic oil burners at Hangar No. 7, North Annex, La Guardia Airport, Jackson Heights, N. Y., will be received at the office of the Director of Purchase of The Port of New York Authority, Room 900, 111-8th Ave., New York 11, until 11:00 A.M. (E.S.T.) Wednesday, November 4th, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be seen at the office of the Department of Purchase and Administrative Services, Room 900, and copies will be furnished upon deposit of $10.00 per set. Deposit must be delivered to Treasury Department, Room 1003, where receipt in duplicate will be issued. The duplicate copy of the receipt is then to be delivered to the Department of Purchase and Administrative Services, and you will be furnished with the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals. The deposit will be forfeited if the documents are not returned within thirty days.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

Bids: November 4, 1953

Underground Structures

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:

RT. 1 (1927) RT. U. S. 1 & 9—Truck (1953), SEC. 5-C
UNDERGROUND STRUCTURES

Route 1 (1927) Route U. S. 1 & 9 -Truck (1953), Sec. 5-C, from Broadway to Communipaw Avenue; Underground Structures for Lane Control System, in the City of Jersey City, Hudson County, Federal Project No. U-118(7), Contract #1.

The principal items for installation are:
Estimated:
4,723 lin. ft. Transite Conduit
13 —Foundation Installations
14 —Standard Installations
33 —Junction Boxes

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, State Highway Office Bldg., 1035 Parkway Ave., Trenton, N. J., on Wednesday, November 4, 1953, at eleven o'clock (11:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Because of the character of the work to be performed under this contract, bids will be accepted only from contractors prequalified in the classifications of grading, paving, or general contracting.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the revised statutes of New Jersey and supplements, and by P. L. 413, 82nd Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the State Employment Service, 363 Summit Avenue, Jersey City, N. J. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all unskilled labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Bldg., 1035 Parkway Ave., Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed:
STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

Bids: November 19, 1953

Ohio Turnpike Commission

139 East Gay Street
Columbus, Ohio
NOTICE TO BIDDERS
Contract C-39
Contract C-40
Contract C-39&40

Sealed proposals will be received by the Ohio Turnpike Commission at or before 10:00 A.M., Eastern Standard Time, November 19, 1953, for the performance of each of the contracts enumerated above.

The work covered by Contract C-39 consists generally of the construction of grading, drainage, structures and paving of approximately 3.9 miles in Construction Section 39 of Ohio Turnpike Project No. 1, beginning at a point about 1,000 feet east of Four Mile House Road at Turnpike Centerline Station 340+00 and extending eastwardly to the Sandusky River at Turnpike Centerline Station 547+77, all in Sandusky County, and the construction of engineers' office buildings and facilities on or near the site of the work.

The work covered by Contract C-40 consists generally of the construction of grading, drainage, structures and paving of approximately 3.9 miles in Construction Section 40 of Ohio Turnpike Project No. 1, beginning at a point approximately 200 feet west of Hessville Road at Turnpike Centerline Station 132+00 and extending eastwardly to a point about 1,000 feet east of Four Mile House Road at Turnpike Centerline Station 340+00, all in Sandusky County, and the construction of engineers' office buildings and facilities on or near the site of the work.

The work covered by Contract C-39&40, which covers a combination of Construction Sections 39 and 40, is the construction as above and elsewhere herein generally described for the individual Construction Sections, taken together.

In Construction Section 39, the principal structures to be built are four box culverts, four single bridges and four twin bridges (each twin bridge consisting of two separate but nearly identical and parallel structures). All of these bridges are steel beam bridges of from one to five spans each supported on reinforced concrete abutments and bents. The abutments and bents for all of these bridges are to be on cast-in-place reinforced concrete piles.

In Construction Section 40, the principal structures to be built are two box culverts, four single bridges and two twin bridges (each twin bridge consisting of two separate but nearly identical and parallel structures). All of these bridges are steel beam bridges of from one to four spans each supported on reinforced concrete abutments and bents. The abutments for all the bridges and the bents for the single bridges are to be on cast-in-place reinforced concrete piles. One twin bridge has bents which are to be on spread footings.

Approximate quantities of the major items of construction for Contract C-39 are as follows:

Roadway Excavation	175,000 Cu. Yds.
Borrow	1,555,000 Cu. Yds.
Structural Concrete	8,300 Cu. Yds.
Reinforcing Steel	1,251,000 Pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	2,500,000 Pounds
10" Reinforced Concrete Pavement	136,000 Sq. Yds.

Approximate quantities of the major items of construction for Contract C-40 are as follows:

Roadway Excavation	202,000 Cu. Yds.
Borrow	247,000 Cu. Yds.
Structural Concrete	4,000 Cu. Yds.
Reinforcing Steel	675,000 Pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	935,000 Pounds
10" Reinforced Concrete Pavement	110,000 Sq. Yds.

For each Contract, fabricated structural steel and structural expansion and/or contraction joints will be furnished by the Commission.

Copies of the Plans and General Specifications for said Contracts are immediately available for public inspection or purchase at the office of the Chief Engineer, Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

General Specifications for Ohio Turnpike Project No. 1	$ 5.00
Plans (also soil profiles and boring logs), per set, per construction section	15.00
Cross Sections, per set, per construction section	25.00

Forms or copies of all remaining Contract Documents, including Proposals for each of the Contracts set forth above; the Affidavit which must accompany any such Proposal; this Notice to Bidders; the Special Provisions applying to said Contracts; the Contract to be entered into with the (or each) successful Bidder; and the Contract Bond to be furnished with such Contract, will be furnished upon request and without charge to any interested person at the aforesaid Chief Engineer's office.

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Each Proposal must be accompanied by a certified check or checks on a solvent bank or banks, payable to the order of the Ohio Turnpike Commission in an amount not less than $100,000 per Construction Section covered by the Contract on which the Bidder bids. If the Bidder shall tender bids for more than one Contract, said amount shall be not less than $100,000 per Construction Section covered by the Contracts on which he shall tender Proposals; provided, however, that if one or more Construction Sections are included in more than one Contract for which the Bidder shall tender Proposals, the Bidder need furnish only $100,000 per each such section, notwithstanding such duplication. The Commission may at any time cash any such check. Each such check or the proceeds thereof will be held by the Commission as a guaranty that, if any Proposal guaranteed thereby is accepted, a Contract will be entered into and the performance of the Proposal secured.

Each such check or the proceeds thereof will be returned or forfeited as provided in paragraphs G-3.03 and G-3.06 of the aforesaid General Specifications, provided that if there be a forfeiture, it shall be of an amount equal to $100,000 per Construction Section covered by the Proposal with respect to which the forfeiture occurs, and any excess will be returned to the Bidder.

All bids must be received at or before 10:00 A.M., Eastern Standard Time, November 19, 1953, in the offices of the Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. At said hour, the bid box will be removed to the Nell House Hotel, 41 South High Street, Columbus, Ohio where all proposals will be publicly opened and read.

The award of any of the above-enumerated Contracts, if any award be made, will be to the Bidder or Bidders whose Proposal or combination of Proposals is lowest and best for the performance of the work, taken as a whole, and complies with all the prescribed requirements. The Commission reserves the right to reject any or all Proposals and to waive technicalities.

OHIO TURNPIKE COMMISSION

Contractors Watch This Section—

for new projects. Publish your announcements through the proposal sections of *Engineering News-Record* and get their bids.

OFFICIAL PROPOSALS

Bids: November 19, 1953

Extension of Tunnel Section

COMMONWEALTH OF MASSACHUSETTS
METROPOLITAN DISTRICT
COMMISSION

Sealed proposals will be received at the office of the Metropolitan District Commission, 20 Somerset Street, Boston, Mass., until 1:30 P.M. Eastern Standard Time, Thursday, November 19, 1953, and then publicly opened for Contract 193 for the construction of the extension of the City Tunnel Section of the Hultman Aqueduct between Shaft 7 in Chestnut Hill and Shaft 9A in Malden. The work consists of excavating about seven miles of rock tunnel 15½ feet in diameter before lining; lining this tunnel with concrete to a finished diameter of 10 feet; placing final concrete linings in Shafts 8, 9 and 9A; pumping ground water; constructing a headhouse at the top of Shaft 9; constructing works and installing equipment at the tops of all three shafts; constructing connecting pipe lines; removing tunnel plug, and other miscellaneous work in connection with the construction of the tunnel. Each bidder shall deposit security in an amount of not less than $350,000. A bond in at least the full amount of the contract will be required of each successful bidder to secure the faithful performance of the contract, and for the payment of all persons performing labor or furnishing materials in connection therewith. Special attention is called to the requirements as to conditions of employment to be observed and to the minimum rates of wages prescribed by the State Commissioner of Labor and Industries. A schedule of such rates is included in the contract and a copy may be obtained at the office of the Metropolitan District Commission. The information for bidders, and the prescribed forms of proposal, contract and performance bond, and plans and specifications may be examined at the above address, and copies thereof obtained from Frederick W. Gow, Chief Engineer of the Construction Division, upon the deposit of $30, to be refunded only to bidders or others returning them within ten days after the opening of bids. The site of the work and the existing conditions at each shaft may be seen by applying at the office of the Chief Engineer, 20 Somerset Street, Boston, Mass. The Commonwealth reserves the right to waive any informality in, or to reject, any or all proposals. No bidder may withdraw his bid within thirty days after the actual date of the opening thereof. A proposal which includes for any item a bid that is abnormally low or high may be rejected as unbalanced.

CHARLES W. GREENOUGH,
Commissioner

Bids: November 10, 1953

Ohio Turnpike

OHIO TURNPIKE COMMISSION
139 East Gay Street
Columbus 15, Ohio

NOTICE TO BIDDERS
Contract C-43
Contract C-44
Contract C-45
Contract C-43&44
Contract C-44&45
Contract C-43, 44&45

Sealed proposals will be received by the Ohio Turnpike Commission on or before 10:00 A.M. Eastern Standard Time, November 10, 1953 for the performance of each of the Contracts enumerated above.

The work covered by Contract C-43 consists generally of the Construction of grading, drainage, structures, and paving of approximately 4.2 miles in Construction Section 43 of Ohio Turnpike Project No. 1, beginning at a point about 2,000 feet east of Lemoyne Road at Turnpike Centerline Station 435+00, in Wood County, and extending eastwardly to a point about 1,000 feet east of Billman Road at Turnpike Centerline Station 66+94 in Ottawa County; and the construction of engineer's office buildings and facilities on or near the site of the work.

The work covered by Contract C-44 consists generally of the construction of grading, drainage, structures, and paving of approximately 4.6 miles in Construction Section 44 of Ohio Turnpike Project No. 1, beginning at a point about 3,000 feet west of Oregon Road at Turnpike Centerline Station 193+50, in Wood County, and extending eastwardly to a point about 2,000 feet east of Lemoyne Road at Turnpike Centerline Station 435+00 in Wood County, and the construction of engineer's office buildings and facilities on or near the site of the work.

The work covered by Contract C-45 consists generally of the construction of grading, drainage, structures, and paving of approximately 3.5 miles in Construction Section 45 of Ohio Turnpike Project No. 1, beginning at a point about 768 feet east of the Lucas-Wood County line (which line is at or near the centerline of the channel of the Maumee River), at Turnpike Centerline Station 7+68, in Wood County, and extending eastwardly to a point about 3,000 feet west of Oregon Road at Turnpike Centerline Station 193+50, in Wood County; the grading, drainage and ditch paving west of Turnpike Centerline Station 7+68 to the east bank of the Maumee River; and the construction of engineer's office buildings and facilities on or near the site of the work.

The work covered by Contracts C-43&44; C-44&45; and C-43, 44&45, which cover various combinations of Construction Sections 43, 44, and 45, is the construction as above generally described for the individual construction section in each combination contract.

In Construction Section 43, the principal structures to be built are seven reinforced concrete box culverts, four single bridges and four twin bridges (each twin bridge consisting of two separate but nearly identical and parallel structures). All of these bridges are steel beam bridges of from three to five spans each supported on reinforced concrete abutments and bents. The abutments of all of these bridges are to be on steel piles. The bents of six of these bridges are to be on steel piles and the bents of two of these bridges are to be concrete columns.

In Construction Section 44, the principal structures to be built are six reinforced concrete box culverts, four single bridges and four twin bridges (each twin bridge consisting of two separate but nearly identical and parallel structures), all of the bridges being steel beam bridges of from one to six spans each. One bridge is a single span bridge supported on reinforced concrete abutments which are to be on spread footings. The remaining seven bridges are supported on reinforced concrete abutments and bents, which are to be on steel piles.

In Construction Section 45, the principal structures to be built are three reinforced concrete box culverts, three single bridges and seven twin bridges (each twin bridge consisting of two separate but nearly identical and parallel structures), all of the bridges being steel beam bridges of from one to five spans each. One bridge is a single span bridge supported on reinforced concrete abutments which are to be on spread footings. The remaining nine bridges are supported on reinforced concrete abutments and bents. The abutments of these nine bridges are to be on steel piles. The bents of seven of them are to be on steel piles, the bents of one bridge are to be on concrete columns, and the bents of the remaining bridge are to be on spread footings.

Approximate quantities of the major items of construction for Contract C-43 are as follows:

Roadway Excavation	100,000 cu. yds.
Borrow	1,420,000 cu. yds.
Structural Concrete	15,390 cu. yds.
Reinforcing Steel	2,320,000 pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	2,290,000 pounds
Steel Bearing Piles	28,000 lineal ft.
10" Reinforced Concrete Pavement	138,000 sq. yds.

Approximate quantities of the major items of construction for Contract C-44 are as follows:

Roadway Excavation	84,000 cu. yds.
Borrow	1,525,000 cu. yds.
Structural Concrete	13,090 cu. yds.
Reinforcing Steel	1,605,000 pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	1,950,000 pounds
Steel Bearing Piles	31,000 lineal ft.
10" Reinforced Concrete Pavement	124,700 sq. yds.

Approximate quantities of the major items of construction for Contract C-45 are as follows:

Roadway Excavation	76,400 cu. yds.
Borrow	1,476,000 cu. yds.
Structural Concrete	13,780 cu. yds.
Reinforcing Steel	1,815,000 pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	2,720,000 pounds
Steel Bearing Piles	44,000 lineal ft.
10" Reinforced Concrete Pavement	93,300 sq. yds.

For each Contract, fabricated structural steel and structural expansion and/or contraction joints will be furnished by the Commission.

Copies of the Plans and General Specifications for said Contracts are immediately available for public inspection or purchase at the office of the Chief Engineer, Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

General Specifications for Ohio Turnpike Project No. 1	$ 5.00
Plans (also soil profiles and boring logs), per set, per construction section	15.00
Cross Sections, per set, per construction section	25.00

Forms or copies of all remaining Contract Documents, including Proposals for each of the Contracts set forth above; of the Affidavit which must accompany any such Proposal; of this Notice to Bidders; of the Special Provisions applying to said Contracts; of the Contract to be entered into with the (or each) successful Bidder; and of the Contract Bond to be furnished with such Contract will be furnished upon request and without charge to any interested person at the aforesaid Chief Engineer's office.

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Each Proposal must be accompanied by a certified check or checks on a solvent bank or banks, payable to the Ohio Turnpike Commission in an amount not less than $100,000 per Construction Section covered by the Contract on which the Bidder bids. If the Bidder shall tender bids for more than one Contract, said amount shall be not less than $100,000 per Construction Section covered by the Contracts on which he shall tender Proposals; provided, however, that if one or more Construction Sections are included in more than one Contract for which the Bidder shall tender Proposals, the Bidder need furnish only $100,000 per each such Section, notwithstanding such duplication. The Commission may at any time cash any such check. Each such check or the proceeds thereof will be held by the Commission as a guaranty that, if any Proposal guaranteed thereby is accepted, a Contract will be entered into and the performance of the Proposal secured.

Each such check or the proceeds thereof will be returned or forfeited as provided in paragraphs G-3.03 and G-3.06 of the aforesaid General Specifications; provided that if there be a forfeiture, it shall be of an amount equal to $100,000 per Construction Section covered by the Proposal with respect to which the forfeiture occurs, and any excess will be returned to the Bidder.

All bids must be received at or before 10:00 A.M., Eastern Standard Time, November 10, 1953, in the offices of the Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. At said hour, the bid box will be removed to the Neil House Hotel, 41 South High Street, Columbus, Ohio, where all Proposals will be publicly opened and read.

The award of any of the above-enumerated Contracts, if any award be made, will be to the Bidder or Bidders whose Proposal or combination of Proposals is lowest and best for the performance of the work, taken as a whole, and complies with all the prescribed requirements. The Commission reserves the right to reject any or all Proposals and to waive technicalities.

OHIO TURNPIKE COMMISSION

Two (2) Gasoline Driven Emergency Tractors

THE PORT OF NEW YORK AUTHORITY
LINCOLN AND HOLLAND TUNNELS
PROPOSAL NO. 255

Sealed proposals for furnishing two (2) gasoline driven emergency tractors for use in the Lincoln and Holland Tunnels will be received at the office of the Director of Purchase of The Port of New York Authority, Room 900, 111-8th Ave., New York 11, until 11:00 A.M. (E.S.T.) Tuesday, November 24, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

OFFICIAL PROPOSALS

Bids: November 5, 1953

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, Public Buildings Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid funds, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time on the 5th day of November 1953, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1 G. L. Nickerson, District Engineer, 353 Broadway, Albany, N. Y. DISTRICT No. 2 L. Ketchum, District Engineer, 109 No. Genesee Street, Utica, N. Y. DISTRICT No. 3 William Robinson, District Engineer, 301 E. Water Street, Syracuse, N. Y. DISTRICT No. 4 E. G. H. Youngmann, District Engineer, Barge Canal Terminal, Rochester 1, N. Y. DISTRICT No. 5 C. R. Wateus, District Engineer, 65 Court Street, Buffalo, N. Y. DISTRICT No. 8 J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.				
Albany, Greene, Schen. Herk., Mad., Mont., Oneida, Cay., Onon. Seneca, Gen., Monroe, Ont., Erie, Oran., Rock., Ulster, West	T.U.B. 53-1	New York State Thruway Hudson, Catskill, Mohawk, & Ontario Sections. Toll Utility Buildings, Plaza Islands and Plaza Canopies		40 Conc. Block Toll Utility Buildings, Plaza Islands and Plaza Canopies and Misc. Work	$130,000 Plans $50	$2,380,000
		NOTE: Plans and Proposals for T.U.B. 53-1 May be Procured Only at Our Albany & New York City Offices.				
DIST. No. 1, G. L. Nickerson, District Engineer, 353 Broadway, Albany, N. Y.						
Albany	R.C. 53-128	Albany-Watervliet S.H. 977	0.10	Asp. Conc. Ty. 1A, Opt. — 0.01 Mi. Misc. Work (Rep. Exist. Culv.) — 0.09 Mi.	1,800 Plans $10	34,000
DIST. No. 3, William Robinson, District Engineer, 301 E. Water Street, Syracuse, N. Y.						
Cayuga	FARC 53-114 FASH 53-13 FARC (OT) 53-113 RC (OT) 53-124	Montezuma-Cayuga-Union Springs Pt. 1 S.H. 8518 Montezuma-Cayuga-Union Springs Pt. 3 Proj. F-1059 (2) (3)	1.49	Asp. Conc. Ty. 1A, Optional	11,000 Plans $10	202,000
DIST. No. 4, E. G. H. Youngmann, District Engineer, Barge Canal Terminal, Rochester, N. Y.						
Genesee	FAC 53-20	Batavia City. Main Street West Proj. U-706(3), Cont. 2	0.86	Traffic Signal System	$800 Plans $10	$14,000
Monroe	LOSP 53-5	Lake Ontario State Parkway Sect. D	3.07	Grad. & F.C. Gravel — 2.59 Mi. Misc. Wk. — 0.48 Mi.	50,000 Plans $15	906,000
DIST. No. 10, M. E. Goal, District Engineer, Montauk Highway, Babylon, L. I., N. Y.						
Bronx	FACBE 53-3	Cross Bronx Expressway Cont. 8B Proj. U-1084(10)	0.46	9" Gen. Conc. Pavt. 2 @ 36' Wide Hy. Sep. Steel Plate Girder 82.5' Viaduct Pl. Gird. and I-Beam 1396' Hy Sep. Steel Plate Girder 170.6'	190,000 Plans $100	3,243,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: November 4, 1953

Road Widening and Resurfacing

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:

RT. 1 (1927) RT. U. S. 1 & 9—Truck (1953), SEC. 5-B
WIDENING and RESURFACING
Route 1 (1927) Route U. S. 1 & 9—Truck (1953), Section 5-B, from Broadway to Communipaw Avenue; Widening and Resurfacing, Jersey City, Hudson County, Federal Project No. U-118(7), Contract #2. Length 0.959 miles. The principal items of construction are:

Estimated:
- 6,662 cu. yds. Roadway Excav.—Unclassified
- 11,000 sq. yds. Macadam Base Course, 8" thick
- 6,100 tons Pavement Type CA-BC-2
- 3,132 lin. ft. Rein. Conc. Culvert Pipe
- 586 lin. ft. C. I. Culvert Pipe
- 10,650 lin. ft. 9" x 20 White Conc. Vertical Curb

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 110, State Highway Office Bldg., 1035 Parkway Ave., Trenton, N. J., on Wednesday, November 4, 1953, at eleven o'clock (11:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the revised statutes of New Jersey and supplements, and by P. L. 413, 82nd Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the State Employment Service 362 Summit Avenue, Jersey City, N. J. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all unskilled labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Bldg., 1035 Parkway Ave., Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed:
STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

(Continued on page 64)

Engineering News-Record

Reaches Your Local Contractors

Its distribution among the contractors of any one state is in proportion to the number of contractors situated in that state. The Official Proposal Columns of *Engineering News-Record* offer precisely the same efficient service to municipalities, counties, state and federal departments in every section of the United States.

OFFICIAL PROPOSALS

APPEAR HERE EACH THURSDAY. PROPOSAL ADVERTISEMENTS ACCEPTED UP TO 10:30 A.M. FRIDAY FOR THE ISSUE DATED THE FOLLOWING THURSDAY. SEND ALL ADVERTISEMENTS TO CLASSIFIED ADVERTISING DIVISION, 29TH FLOOR, McGRAW-HILL PUB. CO., INC., 330 W. 42 ST., N. Y. 36, N. Y.

Bids: October 29, 1953

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, and special provisions for projects financed with Federal Aid funds, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time, on the 29th day of October 1953, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 8				
		J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.				
Rockland	FASS 53-19	Minisceongo Creek Bridge and Approaches on the Stony Point-Grassy Point Road. Project S-421(1)	0.13	Asp. Conc. Ty. 1A, Opt. 100' Composite I-Beam	$11,000 Plans $10	$219,000
		DISTRICT No. 9				
		F. W. Donovan, District Engineer, 71 Frederick St., Binghamton, N. Y.				
Delaware	FASS 53-18	Roscoe-Downsville, Pt. 2 (Co. Rd.). Project S-399(1)	7.33	Bit. Mac. Ty. 1—7.33 Mi. 1 Br. Comp. I.B. 48.3' 4 Brs. Steel I-Beams 38', 40', 24', & 32'	$61,000 Plans $50	1,114,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

R. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: October 29, 1953

Lake Onondaga West Shore Development

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 A.M., Eastern Standard Time, on October 29, 1953 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON THE LAKE ONONDAGA WEST SHORE DEVELOPMENT, HIAWATHA BOULEVARD TO ROUTE 48 CITY OF SYRACUSE AND TOWNSHIP OF GEDDES, ONONDAGA COUNTY WHICH CONSTITUTES CONTRACT NO. SPEC. SM-60.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany 1, New York.
(b) Mr. William Robinson, District Engineer, 301 East Water Street, Syracuse, New York.
(c) Mr. Charles Schaefer, Department of Public Works, 270 Broadway, New York City, New York.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's estimate of cost for this work is $54,375.00.

Proposal for this contract must be submitted in a separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $2,719.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders"

The right is reserved to reject any or all bids.

R. D. Tallamy
SUPERINTENDENT OF PUBLIC WORKS

ENGINEERS for HIGHWAY DESIGN

Are you interested in a career service with the Maryland State Roads Commission?

The Division of Road Design, offers *Permanent Positions* to qualified men in order to carry out its extensive construction program. This is not just another job offer. This is an opportunity to become affiliated with a forward looking state highway department next door to the National Capital. Wanted especially are:

Young graduates in Civil Engineering. If not graduates, applicants must have considerable successful experience in Highway Design.

Qualified applicants will be employed immediately pending Merit System examination which will be held several months after employment. Immediate vacancies available to qualified men as:

Junior Assistant Highway Engineer II.. $4013-4813 per annum

IN ADDITION, every position with the Maryland State Roads Commission means:

1. Immediate Employment at Base Salary
2. Annual Salary Increments (over period of 5 years)
3. Merit System Protection
4. Opportunities for Advancement
5. Annual Leave with Pay (15 days, cumulative to 30)
6. Generous Sick Leave with Full Pay
7. Liberal Retirement Benefits

Address W. Phelps Thomas, Personnel Manager, Maryland State Roads Commission, Tower Building, Baltimore 2, Maryland for application today.

SEARCHLIGHT SECTION

(Classified Advertising)

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$1.50 a Line, minimum 3 lines. To figure advance payment count 5 average words as a line.
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POSITION WANTED and Individual Selling Opportunity Wanted undisplayed rate is one-half of above rate, payable in advance.
Box Numbers in care of our New York, Chicago and San Francisco Offices count as one additional line.
SEND NEW ADVERTISEMENTS to N. Y. office, 330 W. 42nd St., N. Y. 36, for November 5th issue, closing October 26th.

Replies are forwarded each day as received at each of the offices mentioned without additional charge.
EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

DISPLAYED RATE

The advertising rate $17.10 per inch for all advertising appearing on other than a contract basis. Contract rate quoted on request.
An advertising inch is measured ⅞ inch vertically on one col. 3 col.—30 inches to a page. E.N.R.

JR. CIVIL ENGINEERS FOR CALIFORNIA

Permanent positions in California's huge highway program. Wide choice of locations. High-grade professional experience. Open to CE graduates or to non-graduates with 2 years' experience. $376 to start, raise in six months. Positions open at this level only.

STATE PERSONNEL BOARD
1015 L Street Sacramento 14, Calif.

Rewarding Dignified Association For Young Engineer

Does your present professional activity require contacting top utility, industrial executives or structural consulting engineers and architectural offices in your community?

Can you devote an average of about 10 hours work to dignified sales engineering?

With patience and perseverance, you can increase your income quite substantially, without embarrassment to, or interference with, your present professional standing. No investment is required, or samples to carry; no pressure tactics involved.

We are established manufacturing company, financially sound, conservative, and highly regarded in our field. Unusually close cooperation in protected territory, to serious and persuasive associate, in rewarding pleasant association. Write us in confidence.

P-9477, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. *Forty-third year. Write today.*
WILSON *Engineering Corp.*
College House Offices—HARVARD SQUARE, CAMBRIDGE, MASS.

DRAFTSMEN

Detailers and Checkers. Experienced in structural steel on all types of structures including bridges. Excellent opportunity; fast growing Engineering organization. Salary open depending upon experience. Good working conditions, annual bonus. Send complete information, replies confidential.

SAMBORN, STEKETEE & ASSOCIATES
1214 Cherry Street, Toledo 4, Ohio

WANTED
GENERAL SUPERINTENDENT
Over-all charge building construction in Washington, D. C. area. Must be familiar with costs and have administrative ability.
P-9435, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

ENGINEER-ESTIMATOR. Young graduate civil engineer with heavy construction field experience and capable of assuming increasing responsibility leading to position as chief estimator for prominent general contractor operating throughout South and Southwest. Write full particulars, including education, availability, personal details and salary requirements to P-9302, Engineering News-Record.

DESIGN ENGINEERS—Men having experience in design and preparation of drawings and reports for highway, sanitary sewer, water distribution and municipal-type storm drainage systems. Good pay for qualified men with training and experience. Opportunity for advancement. Furnish full information regarding education, training and experience, age, references and salary required. Replies strictly confidential. Department of Public Works, Baltimore County, Towson 4, Maryland.

ENGINEER, CIVIL, first class, experienced in construction work, field or office. P. O. Box 126, Wilmington, Del.

CORRESPONDENT, FIRST class, for involved controversial matters, with typing ability. P. O. Box 126, Wilmington, Del.

REGISTERED CIVIL Engineer, General Municipal Duties, City of National City, California.

WANTED—BUILDING Construction Estimator —By old established North Jersey Company —Must be experienced with emphasis on Industrial Construction. Must have engineering background and be able to handle the complete estimate. Excellent Salary—Profit Sharing—Opportunity to advance—Age 32-42. P-9232, Engineering News-Record.

ENGINEER—HEAVY Construction—Extensive experience in Highway Bridges—Overpasses —Foundations—Excavation—Water Conditions —Concrete in all phases. Must be able to handle bidding—Cost analysis. Profit Sharing—Fine Opportunity if capable. P-9233, Engineering News-Record.

PLANT SUPERINTENDENT by established manufacturer of concrete pipe and products. State age, experience and full particulars. P-9529, Engineering News-Record.

FOREMAN—SEWER and Water Works. Must be familiar with wellpoint work. Good opportunity for the right party. United Construction Company of Michigan, 320 Houseman Building, Grand Rapids 2, Michigan.

PUBLIC WORKS PROMOTER
Must be top flight business getter with proven record of having sold large engineering and architectural projects. Excellent opportunity for promoter, organizer and manager, to handle the department. Salary $10,000 per year, plus. Will operate from Southeast office of National Engineering Firm. Write Fully
P-9496, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

SELLING OPPORTUNITIES OFFERED

SALES ENGINEERS—Albany, New York and Pittsburgh, Pennsylvania with established national concern selling prefabricated metal products to engineering and construction markets. Position offered is permanent and presents excellent future with aggressive, progressive and expanding organization. Engineering degree desirable. Previous sales experience unnecessary. Age 24 to 36. SW-8254, Engineering News-Record.

WANTED—SALESMAN to sell Office Trailers to Contractors. Must be experienced in selling to Contractors. Not over 40 years of age. Contact A. V. Williams, Box 145, Baltimore 20, Maryland.

POSITIONS WANTED

CHIEF AUDITOR — Assistant Controller — Twenty-Five Years experience heavy, industrial, ordinance, atomic, dam, tunnel, cost plus and miscellaneous construction projects. Experienced in handling joint ventures, subcontracts, finances and costs large and small projects. All references and bond; now employed, available inside thirty days. PW-9260, Engineering News-Record.

MECHANICAL ENGINEER — 29 BME, P.E. N.Y. State. Contractor and consulting office experience. Seeks small mechanical contractor requiring design, estimating, supervision, customer contacts. Will Relocate. PW-9315, Engineering News-Record.

BUILDING CONSTRUCTION Executive. Thoroughly experienced estimating; buying subcontracts; materials, etc.; solicitation of new business and field management. PW-9185, Engineering News-Record.

CIVIL ENGINEER, young, adaptable, seeks potentially responsible position in municipal engineering and public works field. Master's degree in C.E., two years varied design and other experience. Training in administration. Vicinity New York only. PW-9458, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT: concrete pipe manufacture. Considerable experience. PW-9428, Engineering News-Record.

MECHANICAL ENGINEER, 38, licensed graduate. Sixteen years experience in field construction, design and plant engineering with chemical process plants and power plants, chiefly with pulp and paper mills. Strong in piping-mechanical and over-all planning. Desire challenging permanent position with progressive firm. Available soon. PW-9493, Engineering News-Record.

PROJECT MANAGER or General Superintendent desires connection with construction company doing foreign or domestic work. Broad experience in direct supervision all types of heavy construction as well as in organization, reorganization, administration and over-all management. Highest references. PW-9495, Engineering News-Record.

TOWN ENGINEER position wanted by Civil Engineer, supervisory experience, P.E., age 31, married. Prefer East location. PW-9479, Engineering News-Record.

ESTIMATOR AND General Superintendent 25 years experience in field and office on heavy construction covering commercial industrial and public works. Age 46. Available at an early date, can assume complete responsibility from estimate to final completion of projects. Salary commensurate with ability. PW-9480, Engineering News-Record.

YOUNG CONSTRUCTION Engineer (Age 30) familiar with estimating—Desires to work in small profit sharing construction company. PW-9531, Engineering News-Record.

Engineers—Foremen—Office Men
Learn latest methods to organize and run work. Prepare for the top jobs.
Send post card for details.
GEO. E. DEATHERAGE & SON
CONSTRUCTION CONSULTANTS
411 So. 5th Ave. Lake Worth, Florida

WANTED
CONTRACT DRILLER
for 600,000 cubic yards of rock to drill 6" hole per foot.
JOHN ARBORIO, INC.
West Cedar St. Poughkeepsie, N. Y.

POSITIONS WANTED

ARCHITECTURAL DRAFTSMAN. Structural designer, industrial-commercial bldgs. Prefer Central States. PW-9530, Engineering News-Record.

FOREIGN WORK desired, complete staff or part. Project Manager, Administrative Manager, Logistics and Fiscal. Engineers in all categories. Superintendents for all phases of construction. All personnel highly qualified, most with "Q" clearance and three to five completed contracts. Available 1 November. PW-9536, Engineering News-Record.

ESTIMATOR, GENERAL construction, experienced in industrial, institutional and public work in New York and New Jersey. Can take complete charge of estimating. PW-9528, Engineering News-Record.

CONSTRUCTION ENGINEER—Executive, 25 years broad experience Field & Office; Chief Estimator; Project Manager; Selling Industrial Construction & Engineering. Presently employed. Desire change to position offering possibilities & security. PW-9481, Engineering News-Record.

DESIGN DRAFTSMAN 10 years supervision and board experience, civil, structural, piping and electrical. Prefer South, SW or Rocky Mt. States. Immediately avail. Salary $6500. 498 Summers Pl. Portsmouth, Va.

INDUSTRIAL RELATIONS, $$Minded. Executive of 11 years experience, with emphasis in field of construction, seeks position where he can prove ability to effect appreciable savings by direction, coordination and execution of policy. Background included extensive knowledge of government procedures built on five years Federal service (1942-47) administering labor relations and personnel procedures for cost-plus-fixed-fee contractors. Complete resume available, but prefer immediate interview. PW-9341, Engineering News-Record.

ESTIMATOR (CHIEF) Heavy construction. P.E., Excavation, Foundations, Concrete, all types heavy construction. Bidding, cost control, sub-contract negotiation, administration. Currently in responsible charge, wish permanent connection New York City contractor or consulting engineer. PW-9537, Engineering News-Record.

WANTED

WANTED
AIR COMPRESSOR
Diesel powered, capacity 315, 500 or 600 CFM; also swinging platform scaffolds; also misc large size powered piping tools and equipment for industrial job.
P. O. Box 126, Wilmington, Del.

WANTED
5,000' 14" Steel Road Forms in Good Condition
BIRCH-LYTLE-GREEN
208 Central Building, Seattle 4, Washington
Phone—Seneca 7955

FOR SALE or RENT

1½ yd Manitowoc 3000B Diesel Crane. 80' bm. Cummins eng. Long Tracks.
1½ yd Koehring 605 Diesel Crane 140' bm. GM Diesel. Long Tracks.
30 ton Industrial Brownhoist Gas Locomotive Crane. 70' bm.
44 ton GE Diesel-Elec. Loco. new 1951.
25 ton GE Diesel-Elec. Loco. new 1950.
30 yd Western & Koppel Air Dump Cars. Lift Doors. Side Aprons.
½ yd Link Belt LS50 Backhoe-Crane.
30 ton Stiffleg Derrick & 3D Hoist.
750 CFM G-D Compr. 125 HP Motor.
130 HP Christian 2D Diesel Hoist.
60 ton Clyde Elec. Revolver or Gantry.

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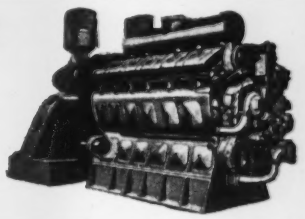

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KW	Make	Model	HP	RPM	KW	Make	Model	HP	RPM
1980	Nordberg	TS-217	2800	225	320	Enterprise	DSG-6	560	450
1136	Fairbanks Morse	38D	1600	720	300	General Motors	8-268A	450	1200
1100	General Motors	16-278A	1600	720	200	General Motors	8-268A	350	900
750	General Motors	12-567	1080	720	150	Worthington	CC-4	225	450
500	Baldwin	VO-8	750	514	150	Ingersoll-Rand	S-4	225	600
500	General Motors	8-278A	750	720	150	Buckeye	80	240	600
500	General Motors	8-567	720	720	100	Worthington	BB-8	150	600
480	Worthington	DD-8	700	360	100	General Motors	3-268A	150	1200
400	Ingersoll-Rand	S-8	600	720	60	General Motors	6-71	90	1200
350	Baldwin	VO-6	510	450	30	Internat'l Harvester	UD-14	45	1200

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165 CFM Smith 110SR Semi-Portable, 25 HP Electric	
194 CFM Worthington Semi-Portable, 40 HP Electric	
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Additional Proposals on pages 54-59

Bids: October 29, 1953

Horace Harding Expressway

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 A.M., Eastern Standard Time, on October 29, 1953 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON THE HORACE HARDING EXPRESSWAY, SECTION 1, QUEENS BOULEVARD TO PARSONS BOULEVARD, CITY OF NEW YORK, QUEENS COUNTY, WHICH CONSTITUTES CONTRACT NO. SPEC. SM-59

Maps, plans and specifications may be examined and obtained at the following offices:
(a) Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, New York
(b) M. E. Goul, District Engineer, Montauk Highway and Little East Neck Road, Babylon, L. I., New York
(c) Charles Schaefer, Department of Public Works, 270 Broadway, New York City

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.
The Engineer's estimate of cost for this work is $18,225.00.
Proposal for this contract must be submitted in a separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $2,412.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders".
The right is reserved to reject any or all bids.

H. D. Tallamy
SUPERINTENDENT OF PUBLIC WORKS

Bids: November 24, 1953

Dwelling Unit Increment

HOUSING AUTHORITY OF THE CITY OF LOS ANGELES, CALIFORNIA
1401 EAST FIRST STREET
LOS ANGELES 33, CALIFORNIA
FOR PART 2—110 DWELLING UNIT INCREMENT
PUEBO DEL RIO EXTENSION
PUBLIC HOUSING ADMINISTRATION
PROJECT NO. CAL. 4-11
LOCATION 53rd STREET, 55th STREET AND LONG BEACH AVENUE
LOS ANGELES, CALIFORNIA

Plans and Specifications
Prepared By
Theodore Criley, Jr. and Henry C. Burge
Architects
510 Knight Way, LaCanada, California
Telephone: SYlvan 0-3262

Invitation for Bids will be published October 16, 1953. Revised Plans and Specifications dated October 16, 1953 and Bidding Documents ready for distribution October 20, 1953.
Bids to be opened 2:15 P.M. (P.S.T.) November 24, 1953.
For further information regarding bidding Telephone ANgelus 2-2121, Extension 55.

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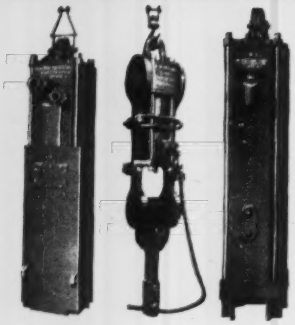

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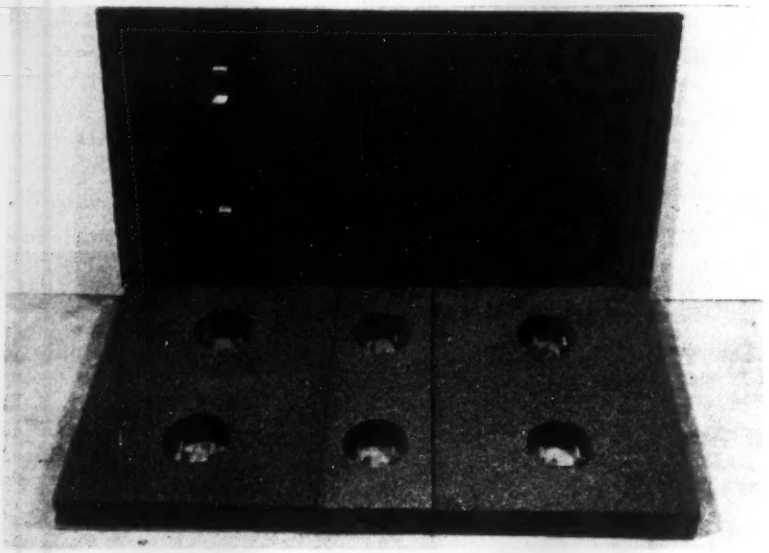


METAL FACES are held by surrounding offset clips with insulating cement.

Panel employs cellular glass core

A new curtain wall panel uses a cellular glass insulating material cored between two porcelain enameled metal faces. Attachment of the metal to the core is by offset clips imbedded in an insulating cement.

The manufacturer notes that the new panel construction represents a favorable compromise in securing a non-loadbearing wall that is waterproof, lightweight, insulates and will not deteriorate, form moisture traps or act as a hygroscopic agent. Other features claimed for the new wall are low maintenance cost, incombustibility, dimensional stability and long life based on porcelain enamel.

Disparities in the coefficients of expansion of the face and core materials ruled out the possibilities of constructing the panels with the use of adhesives. Similarly, the low shear strength of cellular glass precludes direct joining of the materials. The method selected for joining the glass and metal uses offset clips combined with an insulating concrete as a fastening plug. Offsetting of the stainless steel clips eliminates through metal to metal contact.

The new construction will be used for exterior walls in the Douglas Elementary School now being built in Kansas City, Mo. 392 panels with a total area of 4,767 sq ft will be used for the classroom wing, the gymnasium and corridors of the new school. Largest panels on this project measure 3 ft 8 in. x 7 ft 4½ in., but they can be made as large as 5 x 10 ft. The only limitation is the size of the firing furnace used to fuse the porcelain enamel to the base metal. A completed wall is about 2 in. thick and weighs 7 psf.

The new wall was developed with the cooperation of Kivett and Myers, architects for the Kansas City school. Barrows Porcelain Enamel Co., Langdon Farm & Pennsylvania RR, Cincinnati, Ohio.

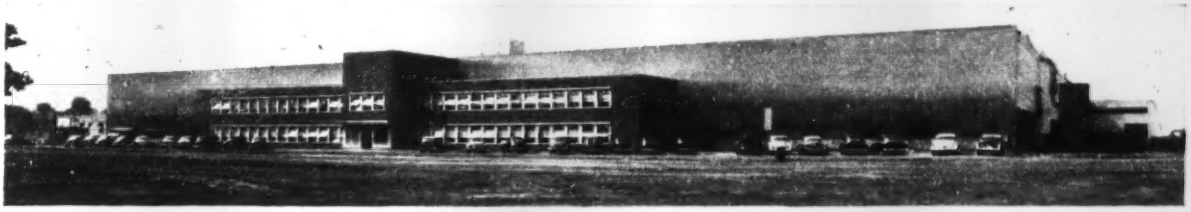
Several drafting tools combined in one instrument

A new device is said to combine the functions of T-square, triangles, straight-edge, scales and protractor in one simple unit that does not require adjustments or additional parts.

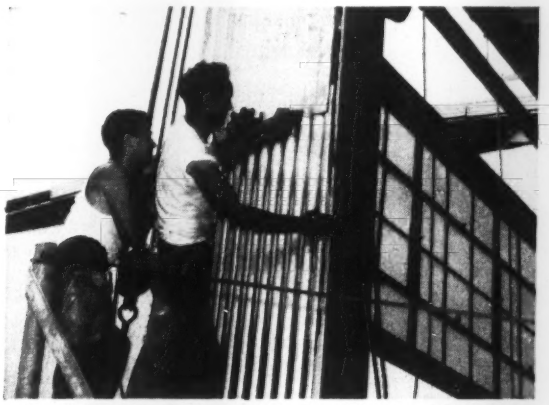
The Paraline weighs less than four ounces and is small enough to be carried in a pocket. For ordinary drawings it may be used on any flat surface such as a table or a desk or to speed up detail work on large drawings where a drafting machine or T-square is used on the drawing board. According to the manufacturer, angles and tangents are rapidly projected; parallels are scaled without raising the device, and it offers a rapid means of cross-hatching.

Two models of the device are available; the more expensive one available in either engineer's or architect's

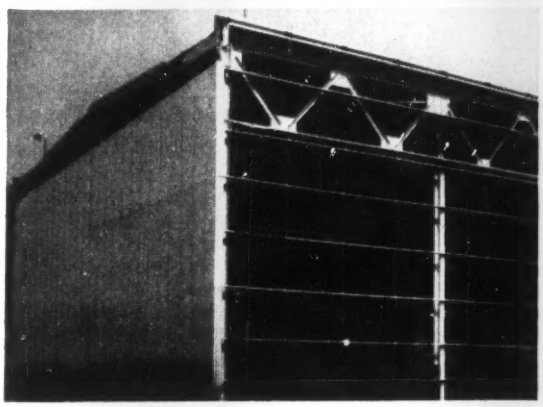
SHEETS OF STAINLESS STEEL enclose the 34 to 36 foot walls of the new plant of United States Steel Homes, Inc. near Harrisburg, Pa. Stainless sheets were fabricated and erected by American Bridge Division of United States Steel Corporation, and the general contractor was Ritter Brothers, Harrisburg.



Walls of Stainless Steel will keep maintenance costs low in this new plant of United States Steel Homes, Inc.



HERE WORKMEN are bolting the 30″ corrugated Stainless Steel sheets to the structural steel frame. Erection is fast and simple; it requires a minimum crew and can be carried out in any type of weather.



THIS VIEW shows Stainless Steel sheets attached to the structural steel framework of the plant. All flashing and trim is Stainless Steel, too.

HERE is one of the largest industrial structures to emerge from the growing trend toward use of Stainless Steel for exterior walls. It's the new plant of United States Steel Homes, Inc.—formerly Gunnison Homes, Inc.—located near Harrisburg, Pa.

The plant is an "L"-shaped structure with approximately 310,000 square feet of floor space. The entire exterior is covered with sheets of 26-gage corrugated Stainless Steel, used in 30″ widths. Approximately 55 tons of Stainless Steel were used.

Reduction of maintenance costs was the primary reason for selection of Stainless Steel sheets. The walls will not require painting and a long, trouble-free life is anticipated. And, in addition, Stainless Steel gives the plant an attractive over-all appearance.

Stainless Steel sheets and panels offer so many advantages, both in construction and through the life of the building, that their cost-per-year is lower than almost any other material. They are considered outstanding developments in architectural circles today.

Panels are available uninsulated or with filler-type insulation between the exterior Stainless sheet and the interior sheet of carbon steel. This makes them suitable for the widest range of building types—plants, warehouses, power plants, office buildings and many others.

If you would like more information on Stainless Steel sheet and panel construction, mail the coupon below.

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525 William Penn Place, Room 2819-C
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United States Steel produces only the Stainless Steel sheet and strip from which panels of this type are made; the panels themselves are fabricated by a number of our customers.

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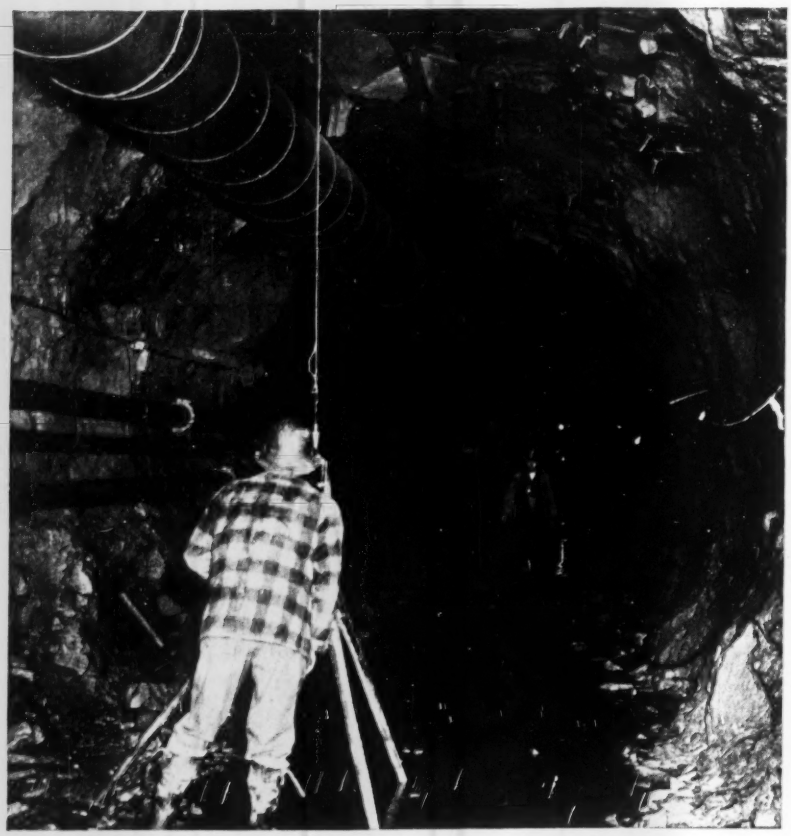

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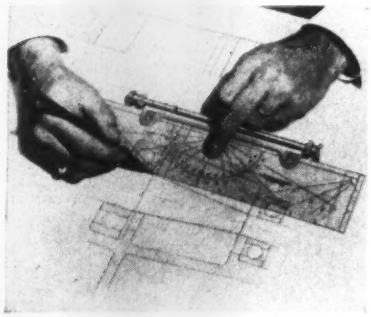

scales, the other available in only the latter. PICKETT & ECKEL, INC., 5 S. WABASH ST., CHICAGO 3, ILL.

Light, English chain hoists now available in U. S.

A lightweight steel chain hoist from England is now available in the U. S. in 11 capacities from ½ to 10 tons.

Despite the fact that the hoists are of all steel construction (with the exception of an aluminum bronze load wheel) their weight is reported comparable with hoists of aluminum alloy construction.

Two types are available. The Standard is equipped with case hardened, ground steel bearings and the Super is equipped with needle and roller bearings. The Standard model is lubricated by removing the gear case; the Super is lubricated through external grease fittings. H. T. KENNEDY CO., INC., 37 WALL ST., NEW YORK 5, N. Y.

Powered-circle turn added to Galion grader

Hydraulically powered circle turn is now available for Galion model 503 motor graders. The manufacturer points out that ditching and windrowing operations can be speeded up and done more efficiently when the new addition is used.

Hydraulic power is furnished by a hydraulic motor and is transmitted through a worm reduction gear to a heavy spur gear. The reduction gear is housed in an oil-tight case to reduce maintenance requirements, and the circle gear is hobbed on the inside to reduce space requirements.

Control of the circle rotation is simply by movement of a lever on the operator's platform. Specifications indicate the circle has a turning range of 140 deg and may be stopped at any desired position; the hydraulic system provides an automatic lock. THE GALION IRON WORKS & MFG. CO., GALION, OHIO.

(New Products continued on page 70)

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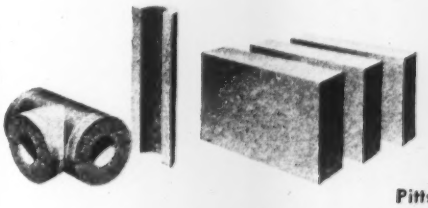

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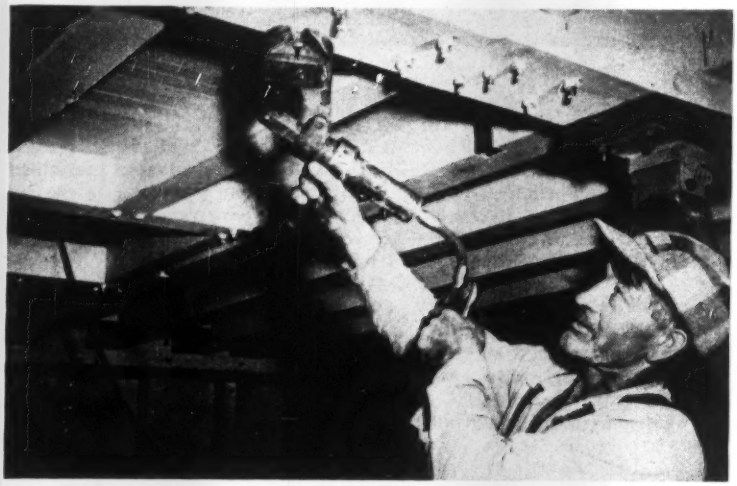
Long wheelbase truck carrying a new Pitman crane can also be used to haul trailers and thereby create a self-contained load and carry unit. The fifth wheel for mounting a semi-trailer can be installed on the crane's sub-frame.

The crane unit itself, designated model 80, has a four-ton capacity on a 25-ft. boom and has been designed for 2½-ton trucks or larger.

The boom can be extended to 59 ft. with additional lengths and can be swung in a full 180-deg. arc. Boom swing is powered by a double-acting hydraulic cylinder and raising and lowering is accomplished by a power-up and power-down topping winch.

The loadline winch can be operated either power-up, power-down or free-spooling. With this setup the operator can let the load down either



HYDRAULIC BOLT CUTTER has a capacity for trimming ⅞-in. mild steel bolts. The Guillotine angular bolt cutter, as the unit is called, can also be obtained with cutback jaws for use in splitting nuts during wrecking operations or for trimming wire mesh. The unit is actuated by a manual lever rather than solenoids, and power is supplied by a portable hydraulic pump. Weight of the cutting head is 23 lbs. Manco Mfg. Co., Bradley, Ill.

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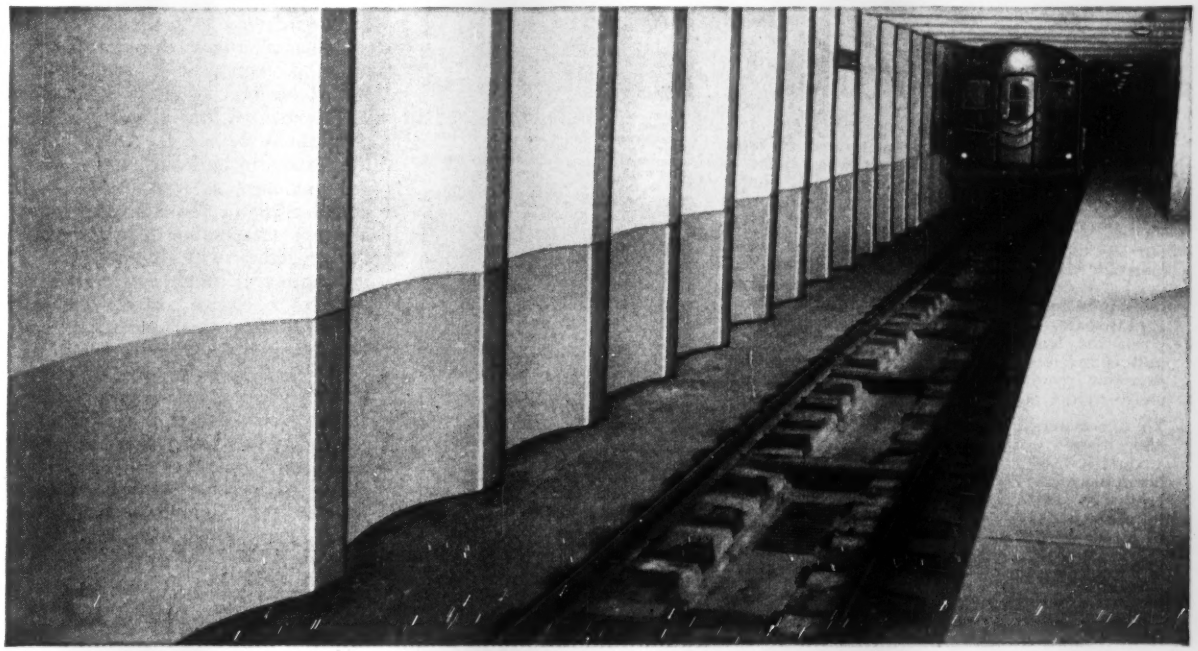

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Wood ties in Philadelphia's new Locust Street Subway are pressure-treated with PENTA*.

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All wood lasts longer, serves better when it's protected against rot, decay and termites. PENTA provides this important protection plus giving a clean treatment. Workmen, too, like PENTA-treated wood because it's clean and easy to handle.

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DOW

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Scraper!

Above, a 2½-cu. yd. Crescent scraper is used on a 1-cu. yd. boom dragline and the yardage rises to 270 cu. yd. per hour. The scraper is taking gravel from a roadside pit and delivering to a movable truck loader.

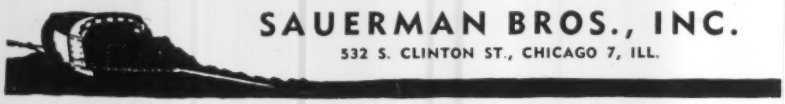
In this picture a Crescent scraper hangs from a trolley that rides on a slack cable extending from the tip of the boom to an anchorage across the river. Thus, it is able to excavate far beyond the reach of the boom and haul material onto the bank.

A Sauerman Crescent Scraper will repay its moderate initial costs many times over when added to your boom machine as auxiliary equipment. Simple to rig up, it increases the machine's capacity when used on specific job operations mentioned below.

For backfilling, grading and other jobs where material must be moved but not lifted, the conventional casting method is used. The Crescent bites into and gathers the load with the ease of a plowshare, then hauls at ground level and deposits the load automatically when the forward pull is reversed. Machine strain and power consumption required to lift and swing the load to the discharge point are eliminated.

To dig material from a river, deep pit or soft area beyond the reach of the boom, another method is used to rig the Crescent Scraper to the boom machine. For such work the Crescent is suspended by chains from a simple trolley that rides on a track cable extending from the tip of the boom out to a movable anchorage. Digging, hauling and discharge proceed as in the casting operation. Following discharge, the empty scraper is lifted and gravity-returned to the excavation point merely by tightening the track cable.

Any boom machine will handle a Crescent of larger size than its regular dragline and clamshell bucket. The Crescent is much lighter, size for size, than these buckets. Digging power and strength are derived from the Crescent's bottomless construction and flowing lines—not from weight of metal. Users of boom machines can obtain full information by writing for illustrated literature describing how other operators use Sauerman Crescent Scrapers on their machines to increase output and reduce costs.



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Building up lake and sea shore property ready for landscaping at low cost without dredges. EFR 211

CLEANING PONDS AND RESERVOIRS
At long last—a simple, economical method of cleaning ponds without draining. EFR 213

CUTTING DOWN HIGH BANKS FROM TOP
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TWO NEW METHODS OF STRIP MINING
Removing overburden and pulling back into long stable slope all in one cycle. EFR 210, 203

DIGGING GRAVEL 65 FEET UNDERWATER
Taking gravel from pit 65 feet below water level, moving 500 feet to processing plant. EFR 214

ROBOT RECLAIMS FROM STORAGE PILES
This machine picks up, transports, and dumps automatically, alone and untended. EFR 225

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Taking tightly-consolidated rock and gravel out of pit 85 ft below water. EFR 216

REVETTING BANKS FROM MIDSTREAM
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REQUEST BY NUMBER — SAUERMAN BROS., INC.
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NEW PRODUCTS

under full power or as fast as he wants with a foot brake.

Boom lengths up to 37 ft. are hinged on the side for rapid conversion to a roadable unit. PITMAN MFG. CO., 300 W. 79TH TERRACE, KANSAS CITY, MO.

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Butyrate plastic has been combined with a suitable vehicle to provide a sealing paint that is said to form a permanent bond with almost any surface to prevent the passage of moisture.

The material as it comes from the container is rather viscous, but for maximum protection it is recommended that it be used as is. When applied in this manner, one gallon covers approximately 220 sq ft, depending on the surface to be sealed.

Liquid-Seal, as it is called, is designed primarily for moisture-proofing masonry surfaces, but its bonding qualities together with its resistance to moisture, acid fumes, etc., suggest its use as a protective coat on steelwork.

The coating is available in two types, a clear and an aluminum color. The clear type is useful for coating exterior brick surfaces since the only apparent evidence of a residue is a slight glaze. If other colors are desired, any paint may be used over the coated surfaces.

In quantity lots the sealer is quite inexpensive. LIQUID-SEAL DIV., SEAL-STRIP, INC., 50-15 70TH ST., WOODSIDE, N. Y.

New Products briefs . . .

Street lights improved—A new street light, reported to direct 20% more light on the roadway than previous units, has been developed by Westinghouse Electric Co., 4505 Euclid Ave., Cleveland, Ohio. The improvement in this mercury vapor unit is achieved through a reflector that directs two main beams to the street and a refractor for side-light control. The new luminaire is designated OV-20 and has a rated life of 6,000 hr. A water-repellent felt gasket is designed to form a weatherproof seal between the globe and lamp housing.

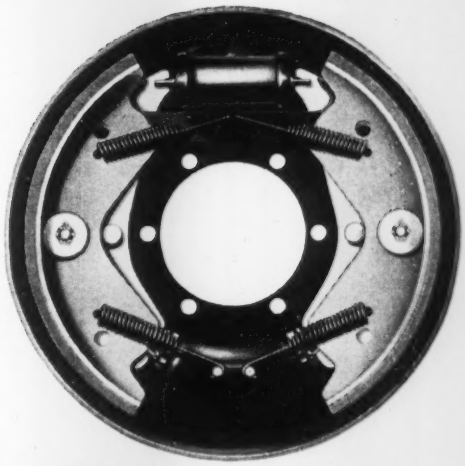
Welding electrode—A new welding electrode has been designed for build-up work and hard-surfacing applications wherein the deposited metal can be machined or flame-hardened. The rod, a development of the General Electric Co., River Rd., Schenectady 5, N. Y., is designated G-E Type W-98. It is recommended by the com-

these

TDA

COMPONENTS

keep front loader costs down!



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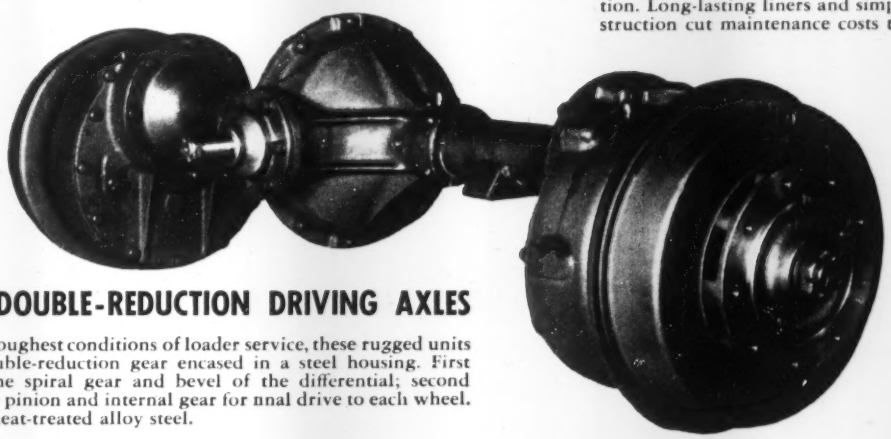

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Designed for the toughest conditions of loader service, these rugged units incorporate a double-reduction gear encased in a steel housing. First reduction is in the spiral gear and bevel of the differential; second reduction is in the pinion and internal gear for final drive to each wheel. All shafts are of heat-treated alloy steel.

MANUFACTURERS SAVE on production and design costs by equipping their front loaders with TDA components. In most cases, units like the ones shown on this page can be easily adapted to any type of front loader. Or, if this is not practical, you can often save money by making full use of TDA's research and engineering experience and widespread manufacturing facilities. We welcome the opportunity to work hand in hand with you in solving your particular problems.

USERS SAVE on maintenance and operating costs when they buy TDA-equipped front loaders. For instance, the modern driving axle shown here is built to provide more than enough power and traction to dig the toughest type of material—yet hold upkeep costs at an absolute minimum. You'll find it pays to insist that your new front loaders are TDA-equipped!

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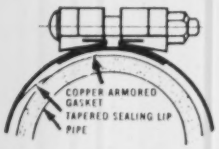

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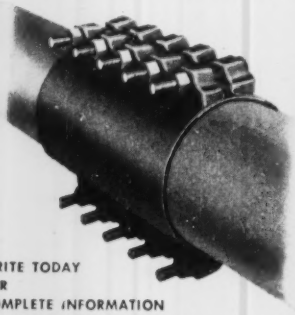

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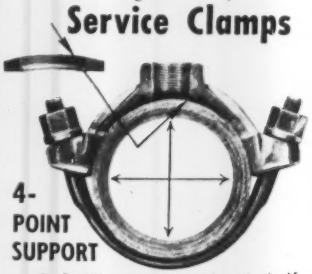

- Saddle extends almost half way around pipe to give 4-point support
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- Made of the new waterworks material, ductile iron
- Delivered at a low cost to you
- Prompt delivery on all sizes—single, double or triple strap—taps: ½" to 4"

SMITH-BLAIR, INC.
Main Office and Factory, 535 Railroad Ave., South San Francisco, Calif.
Branches: Greensburg, Pa., and Downey, Calif.

NEW PRODUCTS

pany for applications where a higher hardness deposit is desired than that obtainable with electrodes used for under layers. While the type of material involved and the welding conditions can affect greatly the hardness of the deposited metal, under most conditions it is reported to be approximately 250 Brinell as welded, while flame hardening produces about a 350 Brinell.

Hydraulic winch—Latest development of Tulsa Winch, Div. of Vickers, Inc., Thompson Bldg., Tulsa, Okla., is a hydraulic powered winch. Utilizing hydraulic motors, Tulsa winches are available up to 15,000-lb capacity with direct or chain drive. The manufacturers believe they have the advantage over standard power winches where there is a need for extremely close control of raising and lowering or a need for a winch in places distant from the source of power.

Ladder shoes—The Alco-Lite all-aluminum safety shoe for straight and extension ladders is produced by Aluminum Ladder Co., Worthington, Pa. The shoe is of cast alaminum and can be used with either the rubber tread or spike floor contact. It is said to be particularly suitable for use around fuels and other volatile liquids, because it will not throw sparks.

Plastic stamp ink—A new ink for rubber stamping on plastics in cases when printing by mechanical process is impracticable has been developed by Artone Color Corp., 21 W. 3rd St., New York 12, N. Y. Called Plastic Stamp Ink, it is claimed to be waterproof and dries instantly to the touch when applied on most plastics, paper, and lacquer coated surfaces. The ink is available at present in three transparent colors: red, violet, blue and semi-opaque black.

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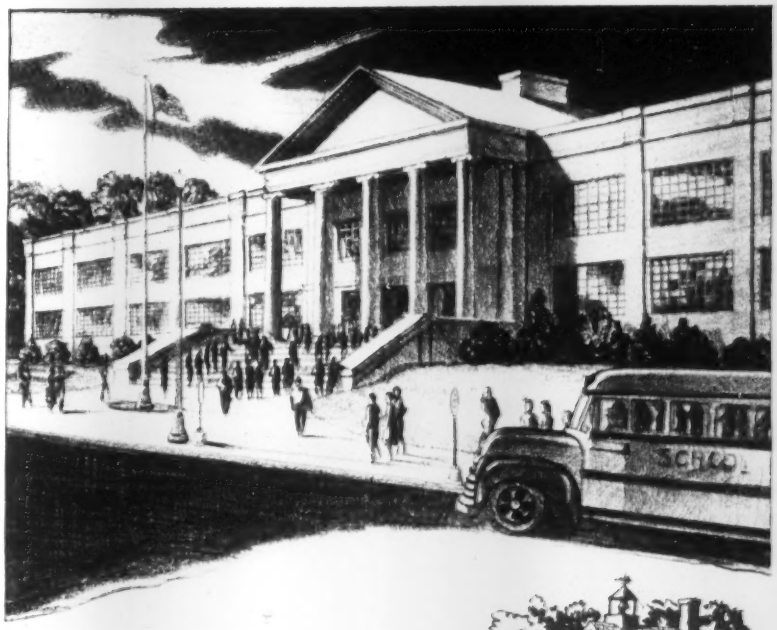

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EDITORIALS

More engineers for research

THE STAFF OF ENGINEERS AND SCIENTISTS at the big General Electric works at Schenectady, N. Y., will be expanded by 50% during the next five years, according to Ralph J. Cordiner, president. On the other hand, the total number of people employed in Schenectady by GE is expected to drop back to the 1946-1950 level by 1957. Mr. Cordiner said that employment had been expanded to abnormally high levels as a result of the Korean war.

Possibly the situation at GE is abnormal, yet it certainly must be an indicator that the trend in industry to employ more engineers and scientists in relation to total number of employees is not slackening. Consequently, although the cessation of fighting in Korea may cause a readjustment in industrial employment in this country, with some temporary unemployment in a few areas, there should be little if any drop in the demand for engineers and scientists.

Obviously, that situation will not affect the field of civil engineering as directly as it will the fields of electrical, chemical and mechanical engineering. Nevertheless, the indirect effect should be favorable.

River pollution abatement aided

POLLUTION ABATEMENT PROGRESS in the Ohio River captured the attention of President Eisenhower two weeks ago while two governors and scores of state, local and industrial leaders joined with the Ohio River Valley Water Sanitation Commission in an all day Clean Water Rally at Cincinnati. The occasion was designed to signalize start of operation of one treatment works, partial completion of another and ground breaking for a third, the group of which will eliminate the pollution from 21 municipalities in the greater Cincinnati area of Ohio and Kentucky.

To the Cincinnati Chamber of Commerce, which was the prime mover in the formation of the eight state pollution control commission five years ago, this occasion provided the opportunity to invite and show mayors and industrial leaders up and down the 981-mile river how far local initiative has responded to the task of restoring the "Beautiful Ohio." To Governors Frank Lausche of Ohio and Lawrence Wetherby of Kentucky it was a chance to point with pride to what communities and industries in both states on opposite sides of the river have already accomplished in working together. And President Eisenhower in a congratulatory message said, "Stream sanitation in the Ohio Valley is a civic objective of tremendous importance to the whole nation. Your accomplishments are dramatic evidence of what can and will be achieved by unselfish community cooperation."

To sanitary engineers the event was one to inspire greater efforts for pollution control with the knowledge that public support is behind them. Such nationwide publicity relating to what the eight states of the Ohio valley have succeeded in doing should help all other groups with like problems.

Form shores in the spotlight

THE COLLAPSE OF CONCRETE BUILDINGS during construction is infrequent enough so that two such failures within three months is cause for real concern. To the collapse of an apartment house in Scarsdale, N. Y., in July is now added that of the concrete roof of a large oil-storage reservoir at Everett, Mass. In both cases, workmen have lost their lives, and property damage has been large. Why should these failures have occurred and how can others of the same general kind be prevented in the future?

All possible causes of the failures are being investigated, and it is hoped that official reports of the findings may soon be released for the information of the profession. In the meantime, one possible cause—inadequate shoring of forms—is worthy of attention. Even should they not have contributed to the failures, practices in shoring are worth re-checking from time to time just to be sure that they leave nothing to be desired.

For example, is the design of form supports a neglected art that has been left to rule-of-thumb experts? Are builders overlooking the importance of bracing shores adequately? Are they paying sufficient attention to the splices in these members? Are they adequately re-shoring concrete slabs that must carry the load of shoring for higher levels? Are they building form supports in such a way that a local failure brings about the destruction of formwork over a large adjoining area, like the collapse of a house of cards?

And what about inspection? Are building inspectors handicapped by lack of easily applied guides that would help them to recognize a dangerous situation in time to prevent collapse?

These are questions that architects, engineers and contractors should consider seriously. Perhaps the answers will point to the need for more stringent requirements in building codes. But more likely they will indicate the necessity for better management on the part of contractors. Possibly also, more organizations are needed like the Concrete Industry Board of New York City, which has been making strong efforts ever since its formation two years ago to point out pitfalls in concrete construction and head off such disasters as those at Scarsdale and Everett.

Until the causes of these recent failures are disclosed and remedial measures prescribed, contractors will find it well worth while to be ultra-conservative in shoring forms and re-shoring concrete slabs.

City Park Garage, Pershing Square, Los Angeles, Calif.; Archt. Stiles Clements, Associated Architects & Engineers; Consltg. Engr.—Murray Erick Associates; Contrs.—Ford J. Twaits Co.; Morrison-Knudsen Co., Inc.; and T-S Construction Engineers, Inc.; 50,000 Cu. Yds. of Pozzolith Ready-Mixed Concrete Supplied by Graham Brothers. All companies of Los Angeles, Calif.

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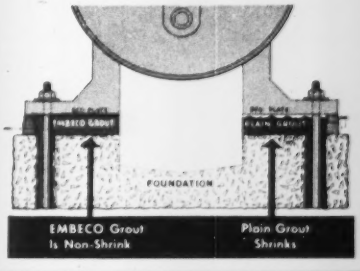

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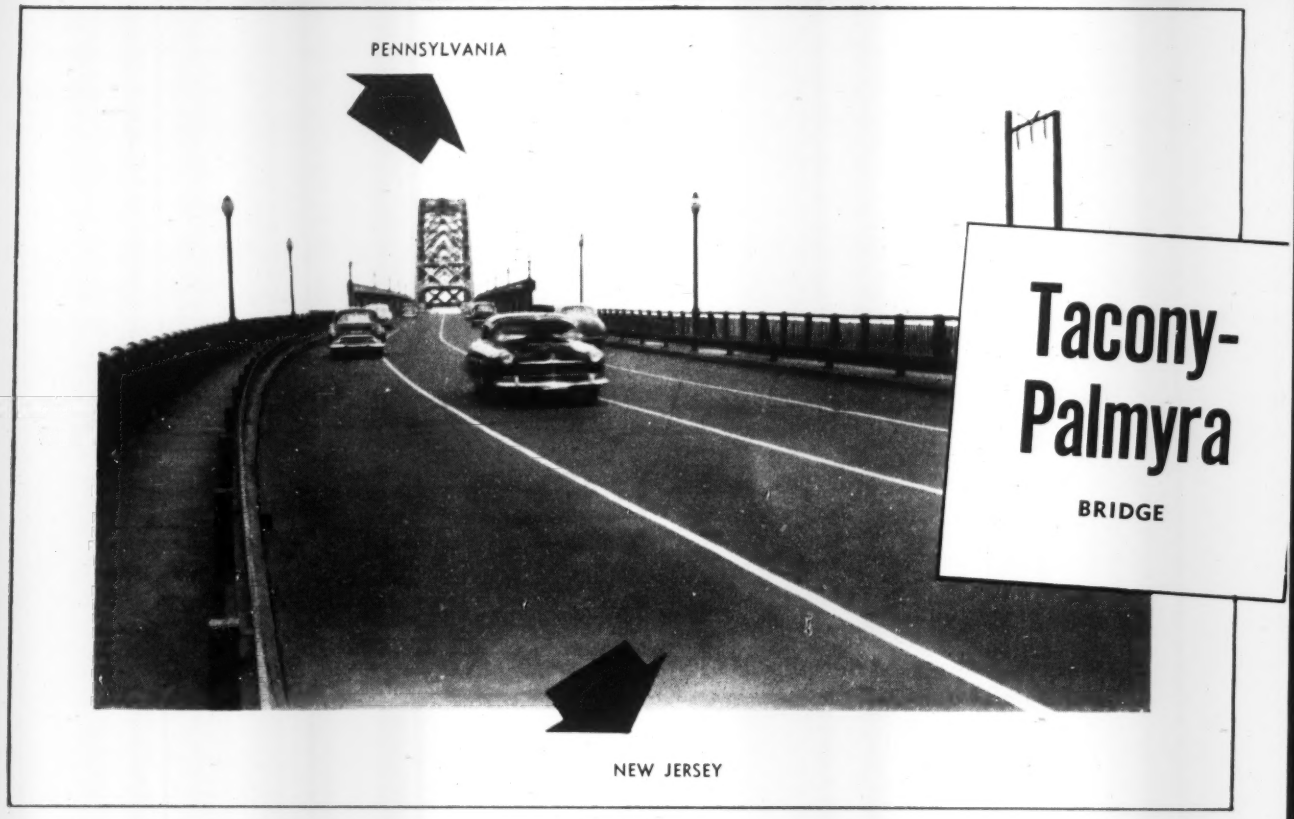

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The Tacony-Palmyra Bridge, an important vehicular bridge linking New Jersey and Pennsylvania across the Delaware River, is under the jurisdiction of the Burlington County, N. J. Bridge Commission. L. A. Schaeffer is General Manager. The hot-mix Texaco Asphaltic Concrete pavement was laid by the Union Paving Company of Philadelphia.

The Tacony-Palmyra Bridge spans the Delaware River, which divides two of the country's most important States, Pennsylvania and New Jersey. Much of the heavy vehicular traffic between these States travels over this bridge—more than 8,300,000 cars and trucks in 1952, with a 15 percent increase anticipated for 1953.

When the bridge needed resurfacing this year, a resilient, heavy-duty Texaco Asphaltic Concrete pavement of the hot-mix type was constructed. The new surface varies in thickness up to 4 inches, averaging $1\frac{3}{4}$ inches. The same rugged, shock-absorbing type of paving has been serving even heavier traffic on the 8-lane Delaware River Bridge, which links Philadelphia, Pa. with Camden, N. J.

In designing pavements for streets, highways, bridges or tunnels, which will be called on to withstand punishing impact, well-informed engineers will include Hotmix Asphaltic Concrete in the specifications. In addition to its well-established durability and low upkeep, its initial cost is lower than that of other comparable types of paving. Today, more than ever, funds available for road and street construction must be so expended as to provide motorists with the maximum mileage of well-paved streets and highways. The sizeable saving which is achieved by paving important urban and interurban trafficways with heavy-duty Hotmix Asphaltic Concrete helps the road builder materially in stretching the paving dollar.

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